

Agricultural Research Plans in Sub-Saharan Africa

A Status Report

Helen Hambly
Louise Setshwaelo

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Contents

Foreword	vii
Preface	viii
Abstract	ix
Executive Summary	xi
Acronyms	xiv
Part 1. Overview of Master Planning	1
Purpose and Objectives of the Study	1
Agricultural Research Plans in SSA	1
Types of plans	1
Status of planning, advisory services, and donor involvement	3
Masterplanning as a Process	5
Comparison of masterplanning process in four NARS	6
Conclusions	8
Part 2. National and Regional Research Priorities	9
Introduction	9
National Research Program Priorities	9
Identifying priorities for agricultural research	9
Classifying research program priorities	10
Reconciling National and Regional Priorities	15
Regional organizations	15
Symmetry of national and regional programs and priorities	15
Final Recommendations and Conclusion	17
Recommendations	17
Conclusions	18
Part 3. Directory of Documentation	19
Angola	20
Benin	21
Botswana	22
Burkina Faso	23
Burundi	24
Cameroon	25
Cape Verde	26
Central African Republic	27
Chad	28
Comoros	29
Congo	30
Côte d'Ivoire	31

Djibouti	32
Equatorial Guinea	33
Eritrea	34
Ethiopia	35
Gabon	36
Gambia	37
Ghana	38
Guinea-Bissau	39
Guinea	40
Kenya	41
Lesotho	42
Liberia	43
Madagascar	44
Malawi	45
Mali	46
Mauritania	47
Mauritius	48
Mozambique	49
Namibia	50
Niger	51
Nigeria	52
Rwanda	53
São Tomé & Príncipe	54
Senegal	55
Seychelles	56
Sierra Leone	57
Somalia	58
South Africa	59
Sudan	60
Swaziland	61
Tanzania	62
Togo	63
Uganda	64
Zaire	65
Zambia	66
Zanzibar	67
Zimbabwe	68

Figures

Figure 1: National research priorities for cereals in SSA (as % of total countries)	12
Figure 2: National research priorities for roots and tubers in SSA (as % of total countries indicating priority)	12
Figure 3: National research priority for legumes in SSA (as % of total countries indicating priority)	13
Figure 4: National research priorities in industrial/export crops in SSA (as % of total countries indicating priority)	13

Figure 5: National priorities for livestock research in SSA (as a % of total countries indicating priority)	14
Figure 6: National research priorities in natural resource management and conservation (as % of total countries indicating priority)	14
Figure 7: National research priorities in SSA for socioeconomics and policy (as % of total countries indicating priority)	15

Tables

Table 1: Types of National Agricultural Research Plans in SSA	2
Table 2: Number of SSA Countries with Types of Plans	2
Table 3: Status of Agricultural Research Planning in SSA by Country	4
Table 4: Comparison of Masterplanning Processes in Four SSA NARS	7
Table 5: Key Lessons Learned by ISNAR in the Masterplanning Process	7
Table 6: Current Status of Masterplanning Process	8
Table 7: Research Program Priorities in SSA by Region	11
Table 8: Program Priorities among Regional Agricultural Research Associations	16

Foreword

In recent years, our experience in assisting national agricultural research systems (NARS) in sub-Saharan Africa in conducting and managing their agricultural and natural resource research has found a significant degree of variation in the extent to which countries have outlined their vision for agricultural research. Some countries have no meaningful research plan, while others have medium- or long-term plans in place that respond to national development orientations and opportunities, as well as resource and organizational constraints. In general, information on the actual status of national plans in sub-Saharan Africa is very limited. This knowledge gap can be a problem for national as well as international organizations concerned with agricultural research. It is unlikely that national and regional priorities for research can be systematically identified without a broader understanding of where individual countries and regional groups of countries stand in terms of their official agricultural research policies, plans, and priorities.

Agricultural research planning in sub-Saharan Africa faces many new and persistent challenges, not the least of which is declining funding and commitment to a process that contributes to a well articulated national strategy. It is becoming increasingly apparent that many medium- and long-term plans are not developed to strengthen the capacity of NARS to articulate their purpose, direction, and resources, but to respond to other imperatives, including those made by donors. It is our hope and intention that agricultural research planning is no longer separated from the need to build and sustain capacity within national systems, and that it will ensure that NARS own the processes and products of planning and priority setting.

This study was initiated by ISNAR in collaboration with the International Institute of Tropical Agriculture (IITA) with the aim of investigating the kinds and content of national agricultural research plans in sub-Saharan Africa. Its main purpose was to shed light on the current state of agricultural research planning in sub-Saharan Africa. This “stock-taking” exercise identifies some current issues facing the analysis of research planning and complements other work conducted by ISNAR to explore agricultural research planning processes and techniques.

As such, this report represents ongoing work for ISNAR, the CGIAR, and other interested partners. We expect and welcome further changes to the database and information presented here. We hope that you will assist us in this process.

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Director General
ISNAR

Lukas Brader
Director General
IITA

Preface

Information collected by this study should be regarded as draft material. Many of the cited documents are considered confidential, and research priorities referenced here appear only in summary format. The authors wish to remind readers of this report that available documentation may not necessarily reflect the actual planning activities or priorities of some countries. It is possible, for instance, that some countries have already begun to change their stated priorities. Furthermore, the authors do not assume to make any judgments on the stated research priorities of the national system or organization, or any endorsement or rejection of the legal status of territories or plans referred to herein. Information in this study was last updated in March 1997.

We wish to thank Christian Bonte-Friedheim, former director general of ISNAR, and Lukas Brader, Director General of IITA, for initiating and supporting this collaborative study and emphasizing its importance for both national systems and the CGIAR. We are also grateful to the following people for their assistance and support in preparing this report: N'Guetta Bosso, Rudolf Contant, Howard Elliott, Thomas Eponou, Zenete Peixoto Franca, Christian Hoste, Jean-Francois Merlet, Steve Tabor, and Larry Zuidema. Comments of three anonymous referees and feedback received from many representatives of African NARS are greatly appreciated. Finally, we thank Melina Tensen for her preparation of the final text, Kathleen Sheridan for her publishing advice, and Jan van Dongen for his editing.

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Abstract

In its work serving the national agricultural research systems of sub-Saharan Africa (SSA), ISNAR has found that limited information is available on the current status of national agricultural research plans and related official documentation. In order to identify the stated official priorities for agricultural research and development in SSA, this study reviews the situation of agricultural research planning in 48 SSA countries. Priority setting has become an integral part of research management in agriculture and natural resource management, and this report seeks to fill some of the information gap that exists concerning national priorities for agricultural research and their significance for regional priority setting.

This review is presented in three parts: (1) an overview of the state of master planning in SSA as both product and process, (2) an analysis of national Research program priorities and their relation to regional priorities and networking in SSA, and (3) a listing of agricultural research planning documents in SSA.

Abrège

Dans le cadre de son travail au service des systèmes nationaux de recherche agricole d'Afrique subsaharienne, l'ISNAR a constaté qu'il y avait peu d'information sur l'état actuel des plans de recherche agricole nationaux, ni sur les documents officiels afférents. Cette étude examine la situation de la planification de la recherche agricole dans 48 pays d'Afrique subsaharienne, afin d'identifier les priorités officielles dans les domaines de la recherche et du développement agricoles. L'établissement des priorités fait maintenant partie intégrante de la gestion de la recherche agricole et la gestion des ressources naturelles. Le rapport cherche à combler certaines lacunes dans l'information concernant les priorités nationales de la recherche agricole et leur importance pour l'établissement des priorités régionales.

Cette étude consiste en 3 parties: (1) un aperçu de la situation de l'élaboration des plans directeurs en Afrique subsaharienne, aussi bien sur les produits que sur les méthodes, (2) une analyse des priorités des programmes nationaux de recherche agricole et de la manière dont elles se situent par rapport aux priorités régionales et réseaux en Afrique subsaharienne, (3) une liste de documents sur la planification de la recherche agricole en Afrique subsaharienne.

Resumen

Al prestar sus servicios a los sistemas nacionales de investigación agrícola del África sub-sahariana, el ISNAR ha encontrado que la información disponible sobre el actual estado de los planes para la investigación agrícola nacional y la documentación oficial pertinente es limitada. Con el fin de identificar las prioridades oficiales para la investigación agrícola y el desarrollo en el África sub-sahariana, este estudio revisa la situación de la planificación de la investigación agrícola en 48 países sub-saharianos. La determinación de prioridades se ha

convertido en parte integrante de la gestión de la investigación agrícola y del manejo de los recursos naturales y este informe trata de llenar el vacío existente por la ausencia de información concerniente a las prioridades nacionales para la investigación agrícola y su importancia en la determinación de prioridades al nivel regional.

Esta revisión se presenta en tres partes: (1) una panorámica de la situación de la planificación nacional, desde la perspectiva del producto así como también de la del proceso, (2) un análisis de las prioridades del programa nacional de investigación y su relación a la prioridades regionales y su red de trabajo en el Africa sub-sahariana, y (3) una lista de los documentos de planificación de la investigación agrícola en el Africa sub-sahariana.

Executive Summary

Most countries require agricultural research plans in order to manage the content of research and provide a means of conducting research. The effective planning of agricultural research has become increasingly important to enhance national food security and sustainable agricultural development in sub-Saharan Africa. Also for investment purposes, the World Bank and the Food and Agriculture Organization of the United Nations (FAO) have been obliging many countries to prepare agricultural research plans. In some circumstances, the members of the Consultative Group on International Agricultural Research (CGIAR) have been called upon to contribute to national agricultural research planning and priority setting. It is the specific mandate of ISNAR to assist national systems with agricultural research policy and management, which includes medium- and long-term planning. In this capacity, ISNAR has worked with many countries in sub-Saharan Africa to review agricultural research systems and conduct diagnostic studies, elaborate medium-term programs and operational plans, as well as develop long-term strategic plans or masterplans. This study investigates the current state of agricultural research planning in SSA.

The key objectives of this study are (1) to review national agricultural research masterplans and other relevant official documents in order to identify priorities for research and development and (2) to assess the significance of these plans for setting regional priorities. This report aims to begin to fill the gap of information and knowledge about the kinds and content of agricultural research planning in SSA. The report has three parts:

- **Part 1** provides an overview of the kinds of agricultural research planning in SSA.
- **Part 2** analyzes stated priorities in national agricultural research plans and the relation of national level priorities to regional priorities and networking in SSA.
- **Part 3** assembles information about current national agricultural research planning documents in SSA in the format of a directory.

ISNAR is one of many international organizations involved in assisting agricultural research planning in sub-Saharan Africa. ISNAR has assisted 26 SSA countries in their planning activities and has worked in research about the kinds, content, and process of planning.

The study finds that an emerging issue in agricultural research planning is the difficulty of defining existing plans and generalizing planning experiences. There is no universally valid process for planning in agricultural research management, and agricultural research plans in SSA vary considerably. Most countries in SSA have some type of agricultural research planning documentation. Eighteen countries, over one-third of SSA, have developed a long-term agricultural research masterplan. Thirteen countries are either in the process of developing a long-term plan or have settled for medium-term plans. Ten countries—among them some of the poorest and wealthiest nations on the continent—do not currently have an up-to-date medium- or long-term plan or operate on the basis of annual planning and priority setting. Overall, the types of plans identified in this study suggest little sequential development in terms of NARS moving from a review of agricultural research into a medium-term and long-term planning instruments. Apparently, some countries may have

individual organizational plans but not a broader national agricultural research plan, or vice versa.

The study has led to the following recommendations:

1. Need for improved and accurate information on national priority setting

- Although national agricultural research priorities in SSA are not static, it is difficult to understand how priorities increase and decrease in importance without having greater knowledge of the processes involved. Information on priorities should be periodically reviewed by national, regional, and international institutions in order to update individual country progress and to better assess change over time.
- Regional research priorities are not easily compared with national priorities, because priorities at the regional level tend to be constructed in a different manner and by different agencies with varying agendas. A lack of standardized procedure reduces quality of information and creates problems for rationalizing national to regional level priorities.
- Harmonizing national and regional priorities should be based on a review of how research capacity is actually and tangibly shared in SSA and on knowledge of what the short- and long-term impact of this shared activity is.

2. Linking national priorities to regional programs

- As it may be unwise to speak in terms of national and regional priorities as if they are the same or even comparable, it may be more accurate to ask how national priorities can be related and linked to regional programs.
- The minimal extent to which agricultural research plans have set priorities related to national policy analysis and socioeconomics is apparent.
- Post-harvest technologies (storage and processing) are important for both perishable commodities and cash crops in order to add value to cash crops. Few national programs address this need and no regional programs have been articulated. Such issues may be of importance to national and regional agencies that stress the need for research that is responsive to economic growth.
- Inclusion of environmental concerns in the research programs is evident in plans created since 1990. National planning as well as regional coordination in research should address this area of research. However, national plans do not indicate a basis for such research at this time, and coordination between different types of plans (e.g., forestry masterplans and national environmental action plans) is weak.
- Countries interpret priority setting differently, and this causes some difficulties for analysis of regional priorities. This presents serious difficulties for reporting results and using them as a basis for decision-making.

In conclusion, the authors submit that agricultural research planning and priority setting are more useful as instruments of institution building than as a one-off “blue-print” for research. Evidently, few plans indicate an effort to broaden research decision making so that the interests of multiple stakeholders, and in particular research users, are taken into consideration when setting priorities, identifying appropriate structures, allocating resources, etc. Planning and priority setting for capacity building are principal challenges for the management of agricultural research in SSA.

Acronyms

ARC	Agricultural Research Corporation—Sudan
ARC	Agricultural Research Council—South Africa
ARD	Agricultural Research Division—Lesotho
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
CARI	Central Agricultural Research Institute—Liberia
CICTE	Scientific and Technological Research Council (CICTE)—Equatorial Guinea
CEFADER	Centre Fédéral d'Appui au Développement Rural—Comoros
CGIAR	Consultative Group on International Agricultural Research
CSIR	Centre for Scientific and Industrial Research—Ghana
CORAF	Conférence des Responsables de Recherche Agronomique Africains
DAR	Department of Agricultural Research—Botswana
DAR	Department of Agricultural Research—Eritrea
DAR	Department of Agricultural Research—Gambia
DAR	Department of Agricultural Research—Malawi
DARE	Directorate of Research and Extension—Mauritius
DART	Department of Agriculture and Research and Training—Namibia
DCPA	Directorate of Agricultural Research Centers— São Tomé and Príncipe
DGRST	Direction Generale de la Recherche Scientifique et Technique—Congo
DRFV	Direction de la Recherche Formation-Vulgarisation—Mauritania
DRSS	Department of Research and Specialist Services—Zimbabwe
DRTA	Division de la Recherche et de la Technologie Agricoles—Chad
EEC	European Economic Community
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FOFIFA	Centre National de la Recherche Appliquée au Développement Rural—Madagascar
IAR	Institute of Agricultural Research—Ethiopia
IER	Institut d'Economie Rural—Mali
IITA	International Institute of Tropical Agriculture
INERA	Institut d'Etudes et de Recherches Agricoles—Burkina Faso
INERA	Institut National pour l'Etude et la Recherche Agronomique—Zaire
INIA	Instituto Nacional de Investigaçao Agronomica—Mozambique
INIDA	Instituto Nacional de Investigaçao e Desenvolvimento Agraria—Cape Verde
INPA	Instituicao Nacional de Pesquisa Agraria—Guinea-Bissau
INRAN	Institut National de Recherches Agronomiques au Niger
INRAB	Institut National des Recherches Agricoles du Bénin
INSAH	Institut du Sahel
IRAF	Institut de Recherche Agronomique et de Forestiers—Gabon
IRAG	Institut de Recherche Agronomique de Guinée
ISABU	Institut des Sciences Agronomiques du Burundi
ISAR	Institut des Sciences Agronomiques du Rwanda
ISNAR	International Service for National Agricultural Research
ISRA	Institut Sénégalais de Recherches Agricoles

KARI	Kenya Agricultural Research Institute
MADR	Ministère de l'Agriculture et du Développement Rural—Djibouti
MESRS	Ministère de l'Enseignement Supérieur National de Recherche Scientifique—Côte d'Ivoire
MINREST	Ministère de la Recherche Scientifique et Technique—Cameroon
NARCC	National Agricultural Research Coordinating Committee—Sierra Leone
NARI	National Agricultural Research Institute—Somalia
NARO	National Agricultural Research Organisation—Uganda
NARS	national agricultural research system(s)
NCAR	National Council for Agricultural Research—Nigeria
SACCAR	Southern African Centre for Cooperation in Agricultural and Natural Resources Research & Training
SIDA	Swedish International Development Agency
SPAAR	Special Program for African Agricultural Research
SSA	sub-Saharan Africa
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WB	World Bank

Part 1. Overview of Master Planning

Purpose and Objectives of the Study

Effective and efficient agricultural research is essential for enhancing national food security and sustainable agricultural development in SSA. In the past decade, nearly every country in SSA has been involved, to some extent, in planning its NARS and subsequently allocating its scarce human, financial, and physical resources. Planning provides a guide to manage the content of research and a means to conduct research.

There is substantial variation in the way in which the countries of SSA have outlined their vision for agricultural research and developed regional perspectives. Some countries have no research plans in place, while others have masterplans that set out long-term priorities and strategies for national agricultural research. Limited information on national agricultural research planning in SSA raises further problems for regional priority setting and networking.

As members of the CGIAR, ISNAR and IITA have accepted the challenge of compiling relevant documentation and identifying the status of agricultural research plans in SSA. Together with their partners in the NARS and regional associations they initiated a study to investigate the types of plans and their stated priorities. Relevant and current documentation was compiled and a database of information was also developed. The analysis of this data responded to the two study objectives: (1) to review national agricultural research masterplans and other relevant official documents in order to identify priorities for research and development and (2) to assess the significance of these plans for setting regional priorities. This research report summarizes information from the country database and presents the initial interpretation of findings.

Agricultural Research Plans in SSA

Types of plans

Most SSA countries have formulated an official policy for national agricultural research. Only 15% of the countries have not developed an agricultural research plan of any type at all.¹ Eighteen of 48 countries in SSA (37.5%) have developed a strategic, long-term agricultural research masterplan. All available plans vary significantly by type and content. Clearly, there is no universally valid process for planning in agricultural research management. Many planners have argued that a strategic, long-term agricultural research plan should logically follow a comprehensive review of the system, but the findings of this study suggest that some countries never move on from the initial review. Evidently, some countries have progressed through a sequence of planning stages—from the review phase through to the concurrent or consecutive development of a medium-term plan and a lon-

1 Countries without planning documents include Djibouti, Equatorial Guinea, Gabon, Liberia, and Sao Tome and Principe. At the time of writing, current information was not yet available for Seychelles and Mauritius. This does not include plans written prior to the independence of former African colonies.

ger-term strategic plan or masterplan. Some national systems immediately move from a sector review into a masterplan (e.g., Namibia and Niger). Other countries have decided (at least temporarily) against developing larger plans and instead operationalize their activities after the sector review process (e.g., Botswana). Due to endogenous change in the countries, many systems encounter lags in the time between different plans. Patterns of agricultural research planning in SSA indicate that they are as unique as the countries themselves. It is nevertheless possible to identify four major types of agricultural research plans in SSA, which are grouped according to their detail and duration of coverage (table 1).

Table 1: Types of National Agricultural Research Plans in SSA

First-generation planning			Second-generation planning
Type 1	Type 2	Type 3	Type 4
Policy principles	Advanced priority setting	Current master-plans in draft or final form	"Rolling" plans
Sector strategy	Medium-term plan		Continued revisions to plans of types 1, 2, or 3
Review	Five-year plan		
Preparatory document	Masterplanning in progress		
Initial priority setting	Expired masterplan		
Annual plan			

A **type-1** plan typically sets out broad operational parameters for NARS. There is a general notion of the principles and priorities for research work, possibly including a systematic review and evaluation of the NARS, preparatory materials for later development of a masterplan, or a "rolling" annual plan. Ten SSA countries (21% of SSA) are currently operating with type-1 documents: Angola, Botswana, Cape Verde, Central African Republic, Guinea-Bissau, Lesotho, Seychelles, South Africa, Togo, and Swaziland.

Type-2 plans have more detailed planning procedures and content that address medium-term (often five-year) objectives for research programs. This category of planning instruments also includes cases in which national agricultural research is involved in the early stages of strategic planning. Type-2 plans also include masterplans that expire without an active replacement, usually due to conditions of instability within the country (e.g., Sierra Leone and Somalia). There are 14 type-2 countries (29% of SSA): Burundi, Congo, Eritrea, Ethiopia, Gambia, Guinea, Lesotho, Mozambique, Nigeria, Senegal, Sierra Leone, Somalia, Zambia, and Zimbabwe.

A **type-3** plan is a strategic plan or masterplan in draft or final form. The terms "strategic plan" and "masterplan" are used interchangeably to refer to macro- or policy-level planning with a long-term perspective. Characteristically, the masterplan (French: plan directeur) is a detailed policy instrument, typically projected across 10 years. The 14 countries (29% of SSA) currently having masterplans are Benin, Cameroon, Chad, Côte d'Ivoire, Ghana, Madagascar, Mali, Mauritania, Namibia, Niger, Rwanda, Sudan, Tanzania (and Zanzibar), and Zaire.

Plans of types 1, 2, and 3 represent what may be considered "first-generation plans" for the NARS. In the "second generation" of masterplanning, NARS update the strategic planning process and product. Countries presently revising masterplans include Burkina Faso, Kenya, Malawi, and Uganda (8% of SSA). These **type-4** plans are especially interesting, be-

cause this type of plan implies that the masterplan is not an end in itself but rather an element in a dynamic process of review and revision of national research goals, building relationships with national institutions, and entrenching the national ownership and value given to these plans.

Apparently, there is regional variation in the development of an agricultural research masterplan. Table 2 illustrates regional distribution of agricultural plans. The East and Central Africa group (second column) has the largest number of masterplans.² Countries of the Sahel and humid and subhumid West Africa (third column) have a more varied experience in planning, with substantial activity among several countries in masterplanning. Of the three regions, Southern Africa (including South Africa) (fourth column), has not followed the masterplan route but instead adopted type-1 or -2 plans. Malawi, which is moving into a second-generation planning process (type 4), is an exception.

Table 2: Number of SSA Countries with Types of Plans

Type of plan	East & Centr. Africa	Sahel, humid & subhum. W. Afr.	Southern Africa	Total
Type 1: Review	0	4	6	13
Type 2: Medium term	4	6	3	11
Type 3: Masterplan	5	7	1	13
Type 4: Revised masterplan	2	1	1	4
No plan or not applicable	1	4	2	7
Total	12	23	13	48

Status of planning, advisory services, and donor involvement

The status of planning, advisory services, and donor support in SSA is summarized in table 3.

Planning an agricultural research system is inevitably a process that is influenced by other interests endogenous and exogenous to the country. Strategic planning fulfills the interests and needs of both national systems and international agencies in the sense that it often guides investment decisions and monitoring, and it identifies research of considerable national priority. The comprehensive diagnosis and detailed decision making required in strategic planning often draws intermediaries, such as ISNAR, into the planning process to offer assistance. ISNAR—the CGIAR center that is charged with agricultural research management and services to national systems—has been involved in 26 cases of national planning in SSA, primarily in West, Eastern, and Central Africa and to a lesser extent in Southern Africa.³ In this study, donor involvement in the masterplanning process is defined as direct financial contributions by external organizations to the planning of agricultural research. These donor agencies are primarily multilateral and bilateral institutions. The World Bank has funded 20 planning processes. In more than half of these cases, the World Bank was the sole donor to the process.

² These regional groups are related to three main regional associations for NARS in SSA: ASARECA, CORAF and INSAH, and SADC.

³ FAO is the other main advisory partner in planning within SSA.

Table 3: Status of Agricultural Research Planning in SSA by Country

Country	Plan type*	Advisor(s)	Funding agent	Year(s) covered
Angola	1	FAO	World Bank, ADB	1992
Benin	2	ISNAR	UNDP	1995–2005
Botswana	1	ISNAR	Norway	1990
Burkina Faso	4	ISNAR	World Bank	1995–2005
Burundi	2	ISNAR	World Bank	1993–1998
Cameroon	3	FAO, ISNAR	World Bank	1995–2010
Cape Verde	1	FAO, Michigan Univ./ INSAH	FAO, USA	1990
Centr. Afr. Rep.	1	FAO	FAO	1991–1996
Chad	3	FAO	FAO	1993–2002
Comoros	—			N/A
Congo	2	FAO	FAO	1996–2010
Côte d'Ivoire	3	FAO	FAO	1994–2004
Eritrea	2		FAO, Italy	1995–2000
Djibouti	—			N/A
Equat. Guinea	—	ISNAR		N/A
Ethiopia	2			1993–2000
Gabon	—			
Gambia	2	ISNAR	USA, World Bank	1985–1990
Ghana	3	ISNAR	World Bank, UK	1994–2004
Guinea-Bissau	1	ISNAR		
Guinea	2	ISNAR	World Bank, France, EC, IFAD	1989–1999
Kenya	4	ISNAR	World Bank, EC	1985–2000
Lesotho	2	ISNAR	USA, WB	1989
Liberia	—			N/A
Madagascar	3	ISNAR	World Bank	1994–2004
Malawi	4	N/A	USAID	1988–1998
Mali	3	ISNAR	USAID	1992–2004
Mauritania	3	ISNAR	World Bank	1995–2004
Mauritius	—			N/A
Mozambique	2	ISNAR	Sweden	1994–1998
Namibia	3	ISNAR	UK	1996–2000
Niger	3	ISNAR	World Bank	1996–2000
Nigeria	2	N/A	World Bank	1992–1998
Rwanda	3	ISNAR	World Bank	1993–2003
Sao Tomé & Princ.	—			N/A
Senegal	2	ISNAR	World Bank, USA, FAO, France, Canada	1996–2006
Seychelles	1			1989
Sierra Leone	2			1987–1992
Seychelles	1			1989
Sierra Leone	2			1987–1992

Table 3: Status of Agricultural Research Planning in SSA by Country (Contd.)

Country	Plan type*	Advisor(s)	Funding agent	Year(s) covered
Somalia	2	ISNAR		1990
South Africa	1	N/A	N/A	1995
Sudan	3			1993–2003
Swaziland	1	N/A	N/A	1993
Tanzania (and Zanzibar)	3	ISNAR	SPAAR, UK, Germany, Netherlands, FAO (Zanzibar)	1993–1998
Togo	1	ISNAR	World Bank	1995
Uganda	4	ISNAR	World Bank	1991–2001
Zaire	3	ISNAR (early stage only)	World Bank, UNDP, FAO, Belgium	1991–2001
Zambia	2	World Bank	World Bank	1991–1995
Zimbabwe	2	ISNAR	N/A	1996–

— No plan developed or no information available

* Type 1: review; type 2: medium term; type 3: masterplan; type 4: revised masterplan

Note: Information valid as of January 1997

Of the bilateral agencies supporting agricultural research planning, the United States Agency for International Development (USAID) was involved in five cases of agricultural research planning; the British Overseas Development Agency (ODA), the British government, and the European Union (EU) in two cases each. Belgium, France, the Netherlands, Norway, and Canada have also collaborated to a lesser extent in joint funding of agricultural research planning initiatives.

Twenty-nine SSA countries have in place medium-term plans or masterplans that will carry their agricultural research up to the end of the century. Among the remaining 19 national systems, the situation is less certain. Plans in 12 countries already expired by 1995, and by 1998, this number will grow to at least 18 if existing documents are not updated or if new plans are not developed.

Masterplanning as a Process

In theory, a longer-term agricultural research plan is both a means to setting priorities and strategies for national agricultural research and an end. As such, a strategic plan or masterplan consists of two dimensions: a process and an output (in the form of an official document). While these two dimensions are described in all masterplans reviewed in this study, national systems and their partners have handled the process dimension in notably dissimilar ways. Some processes apparently give strong emphasis to the context and conditions in which research priorities at the policy and program levels are set (e.g., Benin and Kenya). In this respect, the divergence among plans indicates the extent to which masterplanning is being used within the national system as an integrated mechanism for institutional development rather than a “one-off” requirement for donor investment.

An effective agricultural research masterplan

- determines guidelines for research priority setting, program identification, and monitoring
- presents a flexible structure and organization for national research programs
- describes linkages within the NARS (e.g., universities and NGOs)
- comments on the degree of autonomy or decentralization of research programs, as well as the upgrading, phasing out or development of research stations
- identifies the role of NARS vis à vis international partners and regional research associations

However, an initial examination of masterplans in SSA suggests that masterplans do not necessarily describe each of these elements. Documentation of planning processes in the NARS is limited and the existing material suggests that it is difficult to gauge the extent to which planning instruments have simply made comments about an optimal situation or followed through on the implementation of stated research priorities and resource allocation, linkages, and restructuring. The issue of plan implementation lies outside the scope of this particular study, but it is essential to consider some specific country examples of how different countries have established and conducted their masterplanning process.

Comparison of masterplanning process in four NARS

Several studies have pointed out the difficulty of capturing the experiences of planning in agricultural research.⁴ This section summarizes ISNAR documentation on developing agricultural research masterplans in four countries—Benin, Mali, Tanzania, and Uganda.⁵ First, table 4 illustrates the significant variation that occurs in terms of input and process.

These four NARS have made significant investments of time and financial resources, including the active participation of both national and international planners. In the case of Uganda and Tanzania, outposted staff worked were involved in the masterplanning process. Clearly, the associated costs of masterplanning vary according to the extent to which outposted staff were involved. Table 5 summarizes some of the other lessons that can be learned in the four cases.

4 Collion, M.H. 1991. Collaboration with National Agricultural Research Systems in Planning: A Review of ISNAR Experiences. Background Paper No. 5, prepared for ISNAR 1991 External Program and Management Review.

5 Contributions by N'Guetta Bosso and M.M. Rahman of ISNAR are gratefully acknowledged.

Table 4: Comparison of Masterplanning Processes in Four SSA NARS

	Benin	Mali	Tanzania*	Uganda
No. of researchers**	90	308	320	168
Yearly expenditures	US \$2 million	US \$24.2 million	US \$74.4 million	US \$10.2 million
Project date	1990–96	1987–1990 1991–? (phase 2)	1987–90 1991–95 (phase 2)	1986–88 1994–? (phase 2)
Project objectives	develop policy framework develop action plan and master-plan	develop strategic plan based on first review phase assist in organization of planning	develop masterplan	assist in policy development develop masterplan
Project staffing:				
ISNAR staff	5	4	1	1
expat. consultants	2	none	11	3
nation. consultants	7	none	none	1
NARS staff	30	40	30	8 (full-time) 54 (part-time)
outposted ISNAR staff	no	no	yes (up to Jan. 1995)	yes (up to Sept. 1995)
Projected total value of plan	\$ 30–40 million over 12 years	\$ 100 million over 12 years	\$ 9.79 million annually	?

* Refers to mainland Tanzania (excluding Zanzibar's masterplan).

**Full-time equivalent.

Apparently, there are similarities among countries in terms of the lessons learned in masterplanning. Key issues appear to be building consensus and helping to create conditions that will allow the planning process to emerge and be controlled from within national institutions.

Table 6 illustrates that the four countries diverge when it comes to moving from developing a masterplan to implementing and managing the plan.

Table 5: Key Lessons Learned by ISNAR in the Masterplanning Process

Lesson learned	Benin	Mali	Tanzania	Uganda
National commitments can put time constraints on process	✓			
Voluntary support and commitment of national authorities and research leaders are crucial		✓	✓	✓
There can be too much emphasis on quantitative data collection		✓		
There can be a tendency to develop unrealistic system or complicated targets	✓			
There can be a need for cultural and comprehensive vision of research		✓	✓	✓
Partners such as ISNAR or donor agencies should assume the role of catalyst and not lead decision maker			✓	✓

Table 6: Current Status of Masterplanning Process

Status	Benin	Mali	Tanzania	Uganda
Masterplan being implemented	✓	✓	✓	✓
Delays experienced in implementation		✓	✓	✓
Difficulties in human, physical, or financial resources to effectively manage the plan	✓	✓	✓	✓
Zonal research priorities and programs being defined			✓	
National research priorities and programs being revisited and updated				✓

In Mali, the implementation of the national agricultural research masterplan is now well advanced. of Tanzania has found it difficult to make its stated priorities relate to specific needs within the country. The case of Uganda shows that new national priorities can emerge half-way through the masterplan process. In each country, institutionalizing planning and therefore building up a degree of institutional flexibility that allows the updating of the masterplan are essential for NARS to gain from their investment of time and finance. Experience suggests, however, that masterplanning is an intricate process that requires not only resources, but also substantial commitment to follow-up.

Conclusions

Collion (1991) has remarked that although NARS and international partners have made significant progress in terms of developing tools for planning, sufficient knowledge about what is successful planning is still lacking. To begin with, information on agricultural research plans is limited. In this respect, the present study represents one of the few efforts to take stock of these plans and to investigate their status and their implementation. There remains the need to examine more closely why strategic planning in agricultural research fails to be institutionalized so that the product becomes the start of a learning process and not a static “blueprint” for research.

While there is a global trend towards tighter spending on agricultural research and a move towards regionalization of national research priorities, perspectives on how the product and the process of masterplanning is conceived seem to be widening. Hence, agricultural research plans in SSA cannot, and should not, be generalized. The product is highly variable and the processes underlying them require more detailed analysis.

It is evident, however, that in some cases the long-term plans for agricultural research in SSA can lay an absolutely essential foundation for capacity building, perhaps regardless of whether or not the identical objectives and priorities stated in these masterplans are achieved. Such documents and, more importantly, planning processes, would allow for flexible and ongoing definition of priorities and programs. On the other hand, many agricultural research plans in SSA are quickly becoming obsolete, and there is little sign of the institutionalization of planning. The inflexibility of planning in SSA NARS may present serious obstacles to proactive priority setting in agricultural research.

The next section examines in more detail the priority setting in national plans and, specifically, the relationship between national and regional priorities.

Part 2. National and Regional Research Priorities

Introduction

This section presents the initial findings of the stated priorities in national agricultural research in SSA.⁶ The analysis concentrated specifically on reviewing official planning documents of NARS, identifying the priorities, and assessing their significance for regional priority setting.

Setting priorities is a key aspect of planning agricultural research, but it is only one dimension of the overall planning process. Plans must also document structural and organizational requirements, the role of various actors in the system or organization, and the anticipated institutional changes required to respond to priorities (Collion 1991).

This study focuses on national priorities for research programs. Most NARS in SSA are led by a principal government agricultural research department or institute, and priorities tend to be set only at the level of research programs. These research programs may involve the participation of other member organizations in the NARS, such as universities and nongovernmental organizations. For this reason, this study does not emphasize system-level priorities, although the database established for the study has captured information on the overall objectives for national agricultural research.

National Research Program Priorities

Identifying priorities for agricultural research

SSA countries do not follow any universal method or specific standards in identifying and elaborating the top priorities for national agricultural research.⁷ The findings of this study suggest that the extent to which priorities have been identified varies considerably by country. We emphasize that deductions based on these priorities should be used with some caution, as the lack of clear priority-setting and planning procedures leads to a number of assumptions, including the following:

- National priorities stated in the documents are accurate and reflect strategic and collaborative planning processes, and processes pursued by different countries can be compared.
- Preliminary, medium-term, or intermediate priorities stated by some plans are comparable to longer-term priorities stated by those countries that have developed masterplans.

6 Note that these priorities are derived from the current planning documents (see part 3 of this report) for each SSA country, where available. They do not necessarily reflect the research programs currently being implemented in SSA.

7 Although some planning documents contained secondary and tertiary levels of priorities (i.e., within or among projects), this study focuses on the most general and highest program level of priority setting in NARS.

- Any interim progress made towards individual priorities will not alter the importance of the priority.
- All recommended national priorities stated in the plans can, or will, be implemented.

Taking these assumptions into account, the following section of this report presents some general findings on national agricultural research priorities in SSA.

Classifying research program priorities

The classification of research priorities in SSA is limited by the fact that planners have used different methods of categorizing agricultural commodities, and that the delineation of production systems may vary in terms of their meaning across different agroecological and country contexts. For example, some agricultural commodities in Africa (crops and livestock) are dual purpose, or have at least two usages. Traditional food crops such as groundnuts may in some national systems be prioritized as export or industrial crops but not as domestic food crops. Likewise, some plans do not differentiate livestock improvement for export purposes versus improvement of livestock destined for use by small-scale farmers. Table 7 presents a general classification of more than 40 national and regional research programs priorities.

Crops

Research on maize, sorghum, and rice are the main priorities for national research across SSA (see figure 1). The thrust of research programs in SSA has been on crop management and breeding for pest, disease, and drought tolerance (i.e., crop adaptation). Programs rarely focus on research on post harvest production.

Figure 2 indicates the significance of root and tubers as food crops across SSA. While sweet potato and cassava rank highest among these crops, important variation is apparent in the relative importance of round potatoes in East and Central Africa.

The case of legumes (figure 3) is more complicated, because few national research plans distinguish between legumes as food crops and industrial/export crops. In some regions, the crop may be considered more important for export than domestic use; groundnuts is a relevant case in point, in particular if this priority is compared across different SSA regions.

Our analysis shows that there is a convergence between planning and the relative importance of crops in national and regional economies. In the case of export crops, priorities are also apparently influenced by ecoregional comparative advantage. As well, specialized private-sector research agencies conduct (and influence) most export and industrial crop research. Planning documents do not reflect, however, the role of the private sector in agricultural research.

Table 7: Research Program Priorities in SSA by Region

Research program	East and Central Africa	Southern Africa	Sahel, humid & subhumid W. Africa
Crops			
maize	61	89	80
sorghum	54	100	66
millet	38	78	60
cassava	46	44	25
rice	61	44	66
wheat	54	67	10
banana	54	22	35
cowpeas	8	67	50
potatoes	38	11	5
sweet potatoes	46	56	25
groundnuts	46	67	70
beans	54	78	25
yam	0	0	15
tobacco	8	33	5
tea	23	11	15
sugarcane	15	11	5
coffee	54	11	55
soyabean	38	56	30
sunflower	15	44	5
cotton	61	78	55
rubber	0	0	25
cocoa	8	0	35
oil palm	8	0	25
sisal	8	0	0
nuts	8	44	15
sesame	23	0	15
vegetables	69	78	50
fruit trees	69	78	45
Livestock			
beef cattle	100	89	80
dairy cattle	54	89	40
sheep	61	56	45
goats	46	56	60
NRM			
soils	61	89	35
water	38	78	20
forestry	77	33	55
agroforestry	54	56	15
rangeland	38	44	5
fisheries	38	22	45
Policy and socio-economics			
policy	0	0	5
product. systems	69	89	50

Note: Percentages indicate countries in the region that indicated item as priority for research.

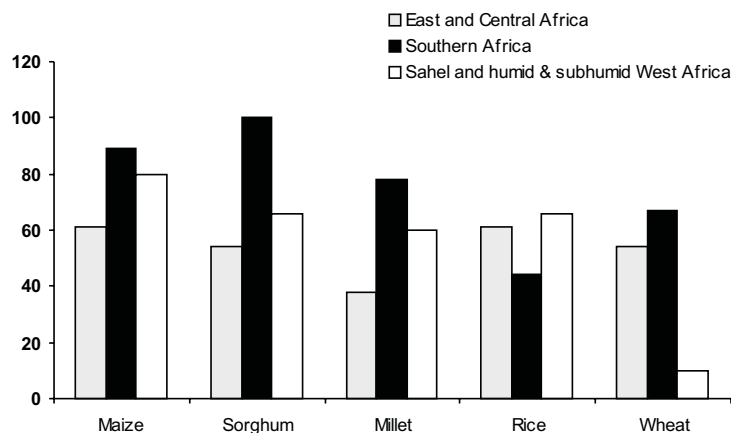


Figure 1: National research priorities for cereals in SSA (as % of total countries)

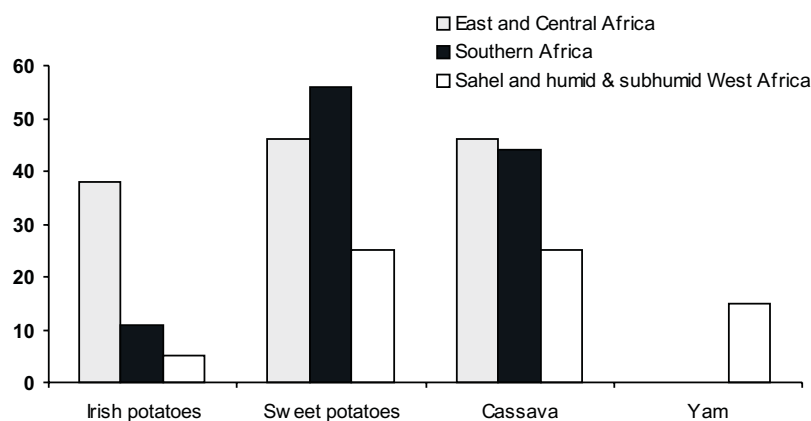


Figure 2: National research priorities for roots and tubers in SSA (as % of total countries indicating priority)

Research in cotton appears to be the most significant priority among SSA countries, in particular among those in the drier ecoregions (figure 4). Coffee is the second main priority, although it is of less importance to Southern Africa. Research priorities for industrial and export crops lie mainly in crop management and breeding (including development or testing of new tissue-culture techniques). Within national planning documents this research makes few, if any, connections between export crops and farming systems, socioeconomics, marketing, or policy studies.

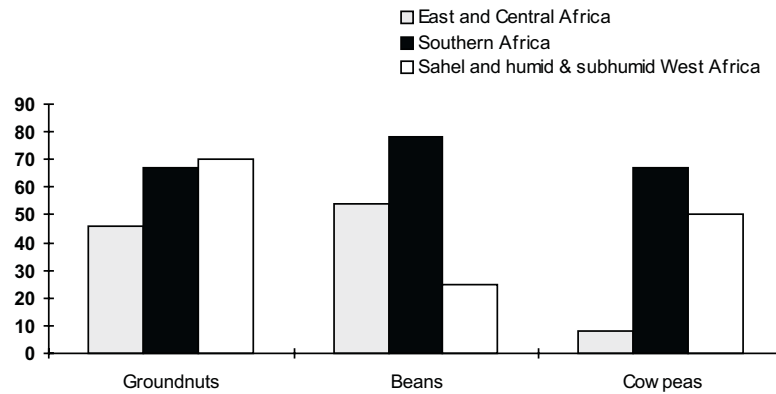


Figure 3: National research priority for legumes in SSA (as % of total countries indicating priority)

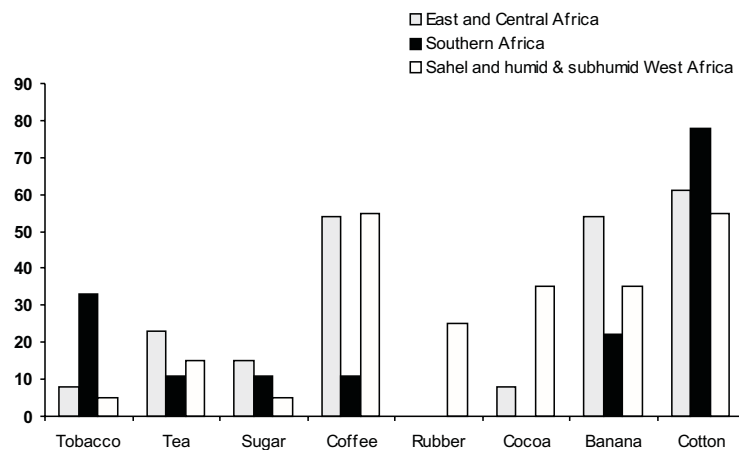


Figure 4: National research priorities in industrial/export crops in SSA (as % of total countries indicating priority)

Livestock

National research on livestock in SSA has traditionally concentrated on cattle, primarily for beef and milk production. Recent masterplans have begun to recognize the role of small ruminants (sheep and goats) and poultry in rural economies. This transition is apparent within the stated priorities for research programs, although it may not be reflected in current operations (figure 5). Major areas of emphasis for research on all livestock continue to be related to management, feeds, and breeding for adaptation. Although livestock production in SSA is based mainly on indigenous breeds, research on germplasm conservation rarely features in the agricultural research plans reviewed in this study.

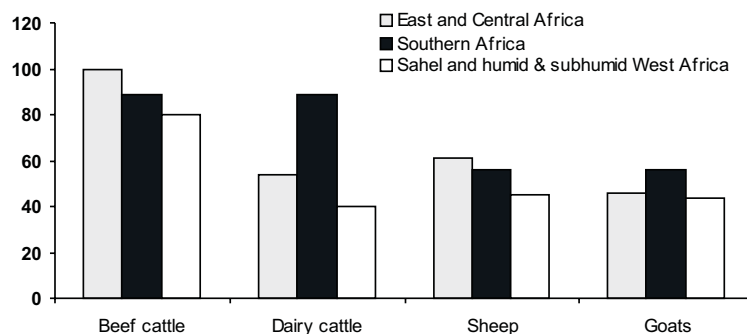


Figure 5: National priorities for livestock research in SSA (as a % of total countries indicating priority)

Natural resource management

Older planning documents do not tend to invoke issues of environmental sustainability and conservation. Recently, many African countries have been involved in developing national forestry masterplans and national environmental action plans. It is expected that these targets will be related to the priorities set out in the agricultural research masterplans (figure 6). However, aside from general references to the existence of such plans, this study did not find any clear cross referencing of environmental (including agricultural) priorities. This could be a possible effort for further study by the CGIAR and regional networks.

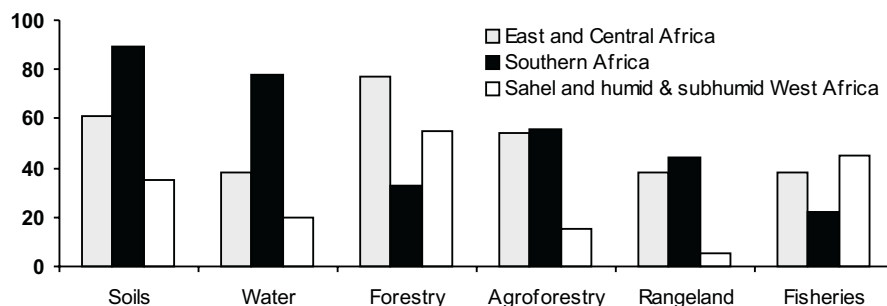


Figure 6: National research priorities in natural resource management and conservation (as % of total countries indicating priority)

Policy and socioeconomics

In relation to national research priorities for agricultural policy and socioeconomics, many of the documents have identified production or farming systems as priorities. These program areas are difficult to analyze, because in some plans livestock and crop-production

systems are separated. Within all the plans reviewed in this study, certain elements receive less attention, notably the areas of land reform, agricultural policy, and marketing (figure 7).

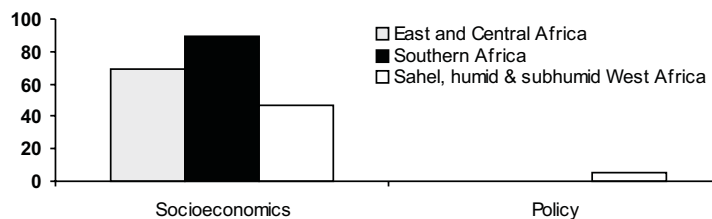


Figure 7: National research priorities in SSA for socioeconomics and policy (as % of total countries indicating priority)

Reconciling National and Regional Priorities

Regional organizations

Regional collaboration is advocated as a means by which costly and time-consuming duplications of research efforts can be avoided and long-term capacity building across a region can be improved. This study examines the research programs of four of the leading regional associations of SSA: ASARECA, CORAF, INSAH, and SACCAR.⁸ Although not all of these organizations have established agricultural research masterplans, they have identified priority areas for research collaboration and investigation. As new member nations (e.g., South Africa and Mauritius) join these regional associations, complications can arise when new priority-setting processes need to be developed to accommodate the needs of new members. Current regional program priorities in SSA are summarized in table 8. Blank spaces in this table indicate commodities that appear in national agricultural research plans but are not apparently mentioned as top priorities for the regional associations.

Symmetry of national and regional programs and priorities

There is an apparent degree of overlap between national and regional programs and priorities. The priority programs for national research in SSA are maize, sorghum, and rice, which are also the priorities for cereal production established by ASARECA, CORAF, INSAH, and SACCAR. There is also significant overlap between national and regional objectives for livestock research.

⁸ ASARECA—Association for Strengthening Agricultural Research in Eastern and Central Africa; CORAF—Conférence des Responsables de Recherche Agronomique Africains; INSAH—Institut du Sahel; SACCAR—Southern African Centre for Cooperation in Agricultural and Natural Resources Research & Training.

Table 8: Program Priorities among Regional Agricultural Research Associations

Commodity	SACCAR	ASARECA	CORAF	INSAH
maize	✓	✓	✓	✓
sorghum	✓	✓		✓
millet	✓			✓
cassava	✓	✓		
rice	✓	✓	✓	
wheat	✓	✓		
banana		✓		
cowpeas	✓			✓
irish potatoes	✓	✓		
sweet potatoes	✓			
groundnuts	✓	✓		
beans	✓	✓		
yam				
tobacco	✓			
tea	✓			
sugarcane	✓			
coffee	✓	✓		
soyabean	✓			
sunflower	✓			
cotton	✓	✓		
rubber				
cocoa				
oil palm				
sisal				
nuts	✓			
sesame				
vegetables	✓			
fruit trees	✓	✓		
beef cattle	✓	✓	✓	✓
dairy cattle	✓	✓	✓	✓
sheep	✓	✓	✓	✓
goats	✓	✓	✓	✓
poultry	✓			✓
soils		✓		✓
water		✓		✓
forestry	✓	✓		✓
agroforestry	✓			
rangeland				✓
fisheries	✓			
policy				
socioeconomics		✓		✓

Regional associations acknowledge cattle and small ruminants as key subjects to their future information sharing and coordination among member countries and research institutes. Only SACCAR and INSAH have elaborated priorities related to poultry production.

One interesting finding is how regional associations identified export commodities, forestry and agroforestry, and socioeconomics as priorities to a much greater degree than did national research plans. Typically, regional associations

- can adjust and respond more quickly to new research needs (such as environmental sustainability) than national systems
- tend to respond to international donor agenda and funding opportunities
- can draw on new and diverse expertise to conduct more innovative research

Relating national and regional priorities should be done with care. As these findings illustrate, research programs at the regional level are not necessarily the cumulative result of national research priorities. Regional interest in export commodities or natural resource management and socioeconomics may arise from planning and priority setting, including, for example, linkages to international research agencies. As well, not all regional associations have the same type of membership, operate in the same way, or have reached the same level of operations. These characteristics also appear to influence the identification of regional priorities. Overall, it is evident that national priority-setting mechanisms and the plans that officially embody these national priorities may not evolve as fast as the definition of regional priorities.

Final Recommendations and Conclusion

Recommendations

Based on the above review of national priorities for agricultural research in SSA, a broad review of literature, and discussions on the topic of masterplanning, it is possible to offer some general recommendations for further study of this issue:

1. Need for improved and accurate information on national priority setting

- National agricultural research priorities in SSA are not static, and without having greater knowledge of the processes involved it is difficult to understand how priorities change. Information on priorities should be periodically reviewed by national, regional, and international institutions in order to monitor the progress made in individual countries and to better assess change over time.
- It is difficult to compare regional research priorities with national priorities, because priorities at the regional level tend to be constructed in a different manner by several agencies with varying agendas. A lack of standardized procedure reduces quality of information and creates problems for rationalizing national to regional level priorities.

- Harmonizing national and regional priorities should be based on a review of how research capacity is actually and tangibly shared in SSA and on knowledge of what the short- and long-term impact of this shared activity is.

2. Linking national priorities to regional programs

- As it may be unwise to speak in terms of national and regional priorities as if they are the same or even comparable, it may be more accurate to ask how national priorities can be related and linked to regional programs.
- Further attention to priorities related to national policy analysis and socioeconomics is recommended.
- Post-harvest (storage and processing) technologies are important for both perishable commodities and cash crops in order to add value to cash crops. Few national programs address research on these technologies and no regional programs have been articulated. Post-harvest issues may be of importance to national and regional agencies concerned with research that is responsive to economic growth.
- Many research programs created since 1990 address environmental concerns. National planning as well as regional coordination efforts should address this area of research. However, national plans do not indicate a basis for such research at this time, and coordination between different types of plans (e.g., forestry masterplans and national environmental action plans) is weak.
- Countries interpret priority setting differently, and this causes some difficulties for analysis of regional priorities. Standardization is necessary for improved reporting of results and using them as a basis for decision-making.

Conclusions

This study represents one of the few efforts to take stock of which SSA countries have developed agricultural research plans, whether or not these plans are current, which agencies have been involved in developing them, the stated priorities in these plans, and the extent to which these national priorities can related to regional priorities and program interests.

The study argues that agricultural research planning and priority-setting are useful instruments of institution building and should not be regarded as one-off “blue-prints” for research. As few plans reflect an apparent, broader decision-making process in agricultural research, it is relevant to ask to which extent the interests of multiple stakeholders—in particular research users—are taken into consideration when setting priorities. Planning that is aimed at building the capacity of national systems is likely to be the principal challenge for agricultural research managers for many more years to come. In this respect, the role of regional associations and organizations may well be significant, but an effort must also be made to make improve the symmetry between regional and national priorities in sub-Saharan Africa.

Part 3. Directory of Documentation

The following directory, which is based on an extensive bibliographic search as well as direct information, highlights key materials produced between 1989 and 1995 concerning agricultural research planning in SSA. Databases searched in this study include CDS-ISIS, SPAAR Dbase, IDRIS, and CAB. Literature searches were conducted through the ISNAR library, and any referenced materials relate to ISNAR holdings. The directory formed the basis for the analysis of the status of agricultural research plans in SSA in parts 1 and 2 of this study. This material is in draft form—it will be regularly updated with comments and further inputs from the NARS and various international agencies.

The directory contains country-specific information on the following items:

- responsible national agricultural research agency
- relevant documentation
- external advisory and funding support for development of the document(s)
- objectives of the document(s) reviewed
- overall priorities for national agricultural research
- research program priorities
- relevant notes and reference number for ISNAR holdings
- related references

Angola

Name and address of the national agricultural research agency

Ministry of Agriculture
P.O. Box 46
Luanda
Tel. +244 2 4163358
Fax. +244 2 2321943
Director: Fernando Paulo Sito

Name of document(s) and year of publication

Mission d'Identification Générale de Projets dans le Secteur Agricole (1992).

Support for the document

This is an FAO Investment Centre report with funding from

1. World Bank
2. African Development Bank

Objectives of the document

1. to provide an overview of agriculture in Angola
2. to assist the Government of Angola in identifying investment programs in agriculture

that could be financed by the World Bank and/or ADB.

Notes

This is an investment report for the entire agricultural sector and includes only a brief review of the state of agricultural research in Angola. It does not set out any funding or program priorities related to the NARS. The document is marked confidential.

ISNAR call no./document location

G156/A01/FAO/92

Other references

1992. Plano Nacional De Investagação Florestal.(G156/K01/Plan/92d)
1990. ISNAR. Lideranca e Admistração/Gestao nos Sistemas Nacionais de Investigaçao Para a Agricultura. Breve Introducao. (G154/RM2/PER/HRM16)

Benin

Name and address of the national agricultural research agency

Institut National des Recherches Agricoles du Bénin (INRAB)
BP 884
Cotonou
Tel. +229 300264
Director: Moïse Houssou

Name of document(s) and year of publication

Plan Directeur de la Recherche Agricole du Bénin: Volume I: Politique Nationale de Recherche Agricole (Avril 1995).
Plan Directeur de la Recherche Agricole du Bénin: Volume II: Première Partie: Plan de Développement à Long Terme (Février 1996).
Plan Directeur de la Recherche Agricole du Bénin: Volume III: Plan d'Action (Juillet 1996).

Support for the document

Advisory services were received from ISNAR with funding from

1. World Bank
2. African Development Bank

Objectives of the document

1. to present a national strategy for research development
2. to assist in the efficient use of available resources while taking into account fiscal and institutional constraints
3. to direct research towards satisfying the needs of its clients

Overall priorities of national agricultural research

1. improvement in food security
2. improvements to the balance of payment
3. increases in rural revenue and incomes
4. conservation and rational use of natural resources.

Research program priorities

1. Food crops (improved storage, processing, productivity, and commercialization)
 - maize
 - yam
 - manioc
 - groundnut
 - cowpea
 - rice
 - sorghum (North only)
2. Livestock
 - animal health (cattle)
3. Export crops (diversification)
 - cotton
4. Agroprocessing (quality control, rural revenue)
5. Conservation and natural resources
 - reforestation
 - soil conservation
6. Policy analysis
7. Information

Notes

Priorities for research programs are broken down by ecoregion. These documents provide an in-depth background to commodity and production systems in agriculture and agricultural research priorities in Bénin.

ISNAR call no./document location

G196/INRAB/PLAN/95/ vol 1/2/3

Other references

1991. ISNAR. de Projet pour le Projet d'Elaboration de Plan Stratégique de la Recherche Agronomique au Bénin (G196/A50/Plan/91P).

Botswana

Name and address of the national agricultural research agency

Department of Agricultural Research (DAR)
Agricultural Research Station
Private Bag 0033
Gaborone
Tel. +267 328780
Fax. +267 359934
Telex. 24343 SACAR BD
Head: Dr. Lucas P. Gakale

Name of document(s) and year of publication

Review of Botswana's Agricultural Research System (1990).

Support for the document

Advisory services were received from ISNAR with funding from NORAD

Objectives of the document

1. to review the strengths and weaknesses of Botswana's NARS, including an in-depth study of DAR
2. to recommend short- and medium-term measures for strengthening the national research system
3. to assist in the preparation of a 10-year strategic plan
4. to recommend the development of a national agricultural research capacity, with linkages required to ensure productivity and impact of that capacity

Overall priorities for national agricultural research

1. to develop and modify the structure of DAR in order to better accommodate a sharper program focus, the production of a strategic plan and improved outputs
2. to organize linkages among DAR, policymakers, and other components of the research system.

Research program priorities

1. Crops
 - cereals: sorghum, millet, maize and wheat
 - oilseeds: sunflower, groundnuts, castor, cotton
 - grain legumes: cowpeas, pigeon pea, soybeans
 - horticulture: vegetables, fruit
 - soil and water management
 - crop production systems
2. Livestock
 - beef
 - dairy
 - small ruminants
 - feeds, range, and pasture
 - livestock production systems

Notes

Botswana does not have a national agricultural research plan. The above document is the most recent and relevant outline for agricultural research in Botswana.

ISNAR call no./document location

G158/A50/ISNAR/R51

Other references

1995. Agricultural and Natural Resources Research and Training Project: 1994-95 Annual Progress Report (not yet cataloged).
1995. Rural Development Coordination Division: Background Paper (G158/E14/WS95).
1992. National Forestry Research Action Plan. (G158/K01/Plan/92D).
1990. Botswana National Water Masterplan Study (not yet cataloged).

Burkina Faso

Name and address of the national agricultural research agency

Institut d'Etudes et de Recherches Agricoles (INERA)
P.O. Box 7047
Ouagadougou
Tel. +226 332 394
Fax. +226 340271 or 307617
Telex 5477*5265 CIRAD BF
Director: Dr. Paco Sereme

Name of document(s) and year of publication

Plan Stratégique de la Recherche Scientifique: Recherches Agricoles, Document Principal 1995–2005 (1995).

Support for the document

Advisory services were received from ISNAR with funding from

1. World Bank
2. French government
3. USAID
4. Dutch government

Objectives of the document

1. to analyze the opportunities and constraints of agriculture in Burkina Faso
2. to present a plan that will guide investment in research and program formulation
3. to examine the organizational structure of the NARS and build NARS capacity to implement the plan.

Overall priorities for national agricultural research

1. to achieve self-sufficiency in food as well as agropastoral and forestry products
2. to improve incomes and standard of living in the rural areas by increasing the diversity and intensity of production
3. to restore and conserve natural resources and develop a natural resource management policy.

Research program priorities

1. Crop production

- traditional cereals: sorghum, millet, maize and fonio
- rice
- oil seeds and food legumes: groundnuts, sesame, cowpeas
- cotton
- roots and tubers
- fruits

2. Animal production

- cattle
- small ruminants
- pork
- poultry

3. Forestry

- reforestation/rehabilitation
- protection of natural cover
- forest products

Notes

Program priorities are also classified by agroecological variation.

ISNAR call no./document location

Not yet cataloged.

Other references

1994. ISNAR. La Liaison entre les Organisations Paysannes et la Recherche Agricole au Burkina Faso (G226/A50/Plan/91P).
1993. Le Financement Public de la Recherche: Cas du Burkina Faso (G226/RM6/SED/93).
1990. INERA. Les Perspectives d'Integration des Systemes de Gestion (G226/RM4/INERA/90).
1986. Lignes Directrices d'Organisation et d'Administration des Recherches Agricoles.

Burundi

Name and address of the national agricultural research agency

Institut des Sciences Agronomiques du Burundi (ISABU)
BP 795
Bujumbura
Tel. +257 2223390
Fax. +257 2225798
Director General: . Madelaine Ndiru

Name of document(s) and year of publication

Preparation du Plan Quinquennal:
Restructuration de la Recherche Agronomique 1993–98 (1993).

Support for the document

Advisory services were received from ISNAR with funding from World Bank

Objectives of the document

1. to present an overview on priorities for research in the planning period 1993–98
2. to follow up from consensual meetings on reorganizing ISABU's structure and programs

Overall priorities for national agricultural research

1. food self-sufficiency, including the improvement of traditional farming systems using available resources
2. food security and revenue through improved, semi-intensive systems using moderate amounts of external inputs
3. revenue creation through intensive systems with high amounts of external inputs

Research program priorities

1. Industrial/export crops
 - coffee
 - tea
 - cotton
2. Food crops
 - wheat
 - rice
 - sweet potato
 - potato
 - beans
 - soya (including rhizobium)
 - peas
 - groundnut
3. Horticulture
4. Livestock
 - cattle: animal health
 - poultry: eggs, meat
5. Forestry and agroforestry

Notes

It does support a regional approach to research within the country. Another plan is listed: Sixth Five-Year Agricultural Research Plan (Draft) (1994–98), but this is not available.

ISNAR call no./document location

G114/ISABU/PLAN/93-98

Other references

1990. ISNAR. Suivi des Actions de Renforcement de la Recherche a l'ISABU (O/ISNAR/G114/CON).

Cameroon

Name and address of the national agricultural research agency

Ministère de la Recherche Scientifique et Technique (MINREST)
BP 2123
Yaounde
Tel. +237 232486 or 233043
Telex 8418 Kn
Secretary General: Charles Binam Bikoï
IRAD Director General: J.A. Ayuk-Takem (tel. 232644, fax 237437)

Name of document(s) and year of publication

Le Système National de Recherche Agricole du Cameroun: Analyse et Propositions de Stratégie pour le Long Terme (Novembre 1995).

Support for the document

FAO
World Bank

Objectives of the documents

1. analyze the NARS of Cameroon
2. present two proposals for a long-term strategy for agricultural research
3. set forth a financial and operation plan for funding agricultural research

Overall priorities for national agricultural research

Two proposals presented include (a) organization according to major sectors of research (annual crops, perennial crops, fisheries, animal production, forests and environment, production systems, economics, and rural sociology) and (b) long-term planning for agricultural research by agroecological zone.

Research program priorities

1. Annual crops
 - bananas and plantains
 - cereals maize, millet-sorghum, rice

- cotton
- legumes
- cassava/ tubers
- Perennial crops
- cacao
- coffee
- tea
- palm oil
- fruits

2. Animal production

- livestock: cattle, small ruminants
- poultry
- breeding
- fodder
- veterinary
- Extension
- socioeconomics

3. Fisheries

Notes

Program priorities are defined by sector/ production systems as well as by agroecological priorities.

ISNAR call no./document location

Not yet cataloged

Other references

1993. FAO. Rapport de Pré-Préparation de la Restructuration de la Recherche Agricole (Phase Interimaire) (G192/A50/FAO/93I).
1992. Report On Priority-Setting Workshop (G192/IRZ/RM1/92E).
1990. Action Plan for Restructuring, Reprogramming and Rehabilitating the Institute of Agricultural Research (IRA/ISNAR) 1989–90.
1990. Action Plan for the Restructuring, Reprogramming and Rehabilitating of the Institute of Animal Research (IRZ/ISNAR) 1989–90.

Cape Verde

Name and address of the national agricultural research agency

Instituto Nacional de Investagacao e Desenvolvimento Agraria (INIDA)
Caixa Postal 84
Praia
Tel. +238 711147
Fax. +238 711133 or 711151
Telex 6072
President: Dr. G. Levy

Name of document(s) and year of publication

1. La Recherche Agronomique au Cap-Vert
Rapport d'une Mission de Revue (1990)
2. The National Agricultural Research Systems
of West and Central Africa (1995)

Support for the document

- Document 1 and 2 are FAO publications.
- USAID is supporting the current development of a strategic plan through Michigan State University.

Objectives of the document

1. to review the programming, planning, and organization of agricultural research in Cape Verde
2. to determine the priorities for agricultural research and organizational requirements for relevant research programs
3. to suggest approaches to preparing a long-term for agricultural research

Overall priorities for national agricultural research

To design an agricultural research program that contributes to the immediate and future development for the country.

Research program priorities

1. Rainfed crops
 - maize
 - beans
 - other legumes
2. Roots and tubers
 - cassava
 - sweet potatoes
3. Irrigation
4. Soil conservation and management
 - soil erosion
 - soil fertility: irrigated and rainfed systems
 - soil salinity
5. Biological pest control
6. Fisheries
7. Forestry

Notes

Fisheries and forestry are not well developed research programs. A 10-year strategic plan is in progress as part of a USAID project with the involvement of INSAH. Information on Cape Verde's research priorities was also received from collaborators at Michigan State University involved in the USAID project.

ISNAR call no./document location

G194/A50/FAO/90
G100/A01/CAS/95

Other references

1995. Agricultural Research in Cape Verde.
(Workshop Paper) (G194/A50/SAB/92).

Central African Republic

Name and address of the national agricultural research agency

Ministère du Développement Rural
B.P. 786
Bangui
Tel. +236 612661
Director: Moïse Denissio

Name of document(s) and year of publication

1991. Rapport Technique: Préparation d'un
Projet de Création d'un Institut National de Re-
cherche Agronomique: République
Centrafricaine.

Support for the document

This is an FAO publication.

Objectives of the document

1. to present an action plan for the short and medium term
2. to review and address the constraints in the Central African Republic's NARS

Overall priorities for national agricultural research

1. self-sufficiency in food crop production
2. increase in exports, especially coffee and cotton
3. reduction in expenditures on veterinary products (in particular trypanocides)
4. establishment of a forestry program
5. increase in protein-based resources, especially through pisciculture
6. increase in productivity associated with higher performance production systems

Research program priorities

1. Food crops
 - manioc
 - cereals: sorghum and millet
 - groundnuts
 - yam and taro
 - cowpea
 - sesame
2. Horticulture
3. Industrial crops
 - cotton
 - coffee
4. Animal production
 - animal health
 - pasture
 - trypanosomias
5. Farming systems

Notes

FAO (1995) notes that current research allocation is primarily cotton and soil science, with the other areas poorly covered. The same document refers to the recent creation of a research coordinating body called the Central Africa Agricultural Research Institute (ICRA).

ISNAR call no./document location

G116/A50/FAO/91

Other references

1995. The National Agricultural Research Systems of West and Central Africa (G100/A01/CAS/95).

Chad

Name and address of the national agricultural research agency

Division de la Recherche et de la Technologie
Agricoles (DRTA)
Ministère du Développement Rural
B.P. 441
N'Djamena
Telex 5303 MINAGRI KD
Director General: M. Chérif Bichara

Name of document(s) and year of publication

Programme de Développement de la Recherche
Agronomique du Tchad. Vol II: Le Plan
Nationale à Longue Terme (1993–2002)

Support for the document

FAO

Objectives of the document

1. to update and ensure the implementation of an organized, efficient, and effective policy instrument for planning national research development
2. to present a *plan-objectif quantitatif* in order to organize and mobilize resource allocations (human, physical, and financial resources) for regional and national programs

Overall priorities for national agricultural research

1. moderate increases in agricultural research staff but a phasing out of reliance on foreign expertise and assistance
2. regionalization/decentralization of staff and programs, including creation of small agricultural research centers in both the Sahelian and Saharian zones
3. improve the balance in research output, themes, and scientific disciplines with atten-

tion to rainfed and irrigated agriculture, the environment, production systems, and rural economy and sociology

4. reinforce the relationship between production systems and four research centers
5. designate a national authority for agricultural research
6. promote a personnel policy adapted to the needs of applied research for development

Research program priorities

1. Rainfed agriculture
 - millet
 - sorghum
 - cotton
2. Irrigated and intensive agriculture
3. Animal production
4. Environment and conservation of natural resources
5. Rural economy
6. Others
 - biodiversity
 - information

Notes

Program priorities are further classified by agroecological zone.

ISNAR call no./document location

VOL II: GB/118/A50/FAO/93-2

Other references

1991. Programme de Développement de la Recherche Agronomique du Tchad. Vol I: Analyse du System de Recherche Agronomique (Vol I: GB/118/A50/FAO/91-1).

Comoros

Name and address of the national agricultural research agency Centre Fédéral d'Appui au Développement Rural (CEFADER) P.O. Box 289 Moroni Director General: Mr. Kossimo Masaidie	Notes No up-to-date information is available. Other references 1988. FAO Investment Centre. Comoros Second Agricultural Services Project (FY 90) Initiating Project Brief. (G160/ASP2/FAO/PB).
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Congo

Name and address of the national agricultural research agency

Direction Generale de la Recherche Scientifique et Technique (DGRST)
B.P. 2499
Brazzaville
Tel. +242 810607
Director General: M.M. Onanga

Name of document(s) and year of publication

La Recherche Agricole au Congo Situation Actuelle et Propositions de Stratégie Pour le Long Terme (Janvier 1996).

Support for the document

G176/DRSS/ISNAR/R32E FAO

Objectives of the document

1. to analyse the evolution of the national system for agricultural research and the need for a long-term plan
2. to present proposals for change

Overall priorities for national agricultural development

1. to recognize the limitations of resources
2. to consider efforts to regionalize research
3. to conduct research that addresses the development needs of the country and its people
4. to assess priorities for research based on four categories: crop production; animal and fisheries production; forest and wildlife; production systems, economics, and rural society.

Research program priorities

1. Crops
 - roots and tubers: manioc
 - fruits: bananas
 - coffee and cacao
 - oil palm
 - sugarcane
2. Animal and fisheries production
 - animal health
 - breeding
3. Forest and wildlife
4. Production systems research
 - agroecological systems
 - social issues
 - financial issues

Notes

This planning document provides significant information on the current potential and constraints of agriculture in Congo.

ISNAR call no./document location

Not yet cataloged.

Other references

1989. La Recherche Agricole au Congo Situation Actuelle et Perspectives de Développement (G120/A50/89).
ONANGA/ISNAR. Politique Scientifique et Technologique de la République du Congo. (G120/A50/ONA/92).

Côte d'Ivoire

Name and address of the national agricultural research agency

Ministère de l'Enseignement Supérieur National
de Recherche Scientifique (MESRS)
B.P. 151
Abidjan
Fax. +225 212225
Minister: M. Toure Saliou

Name of document(s) and year of publication

La Systeme National de Recherche
Agronomique de la Côte d'Ivoire: Analyse de la
Situation Presente et Propositions de Stratégie
pour le Long Terme (1994).

Support for the document

FAO

Objectives of the document

1. analyze and evaluate the NARS
2. elaborate the stages of planning for a long-term research plan
3. contribute to a medium-term action program for the NARS

Overall priorities for national agricultural research

1. improve national agricultural and agroindustrial productivity, diversity, and competitiveness of Ivorian agriculture through
2. development of crops with high production potential, pest, and disease resistance, as well as good commercial quality
3. technically adapt these materials for different regions and socioeconomic conditions and make them suitable for the conservation of natural resources

Research program priorities

1. Coffee
2. Cacao
3. Kola nut
4. Cotton
5. Oil palm
6. Coconut
7. Rubber
8. Horticulture
 - fruits
 - citrus

Notes

Agricultural policy and research are dominated by industrial/export crops. No information is yet available on food crop and livestock research programs.

Centre Ivoirien de Recherche Economique et Sociale (CIRES) conducts agricultural-related socioeconomic research and has its own master plan (1984–2000).

ISNAR call no./document location

G204/A50/FAO/94

Other references

1984. ISNAR/IRAT Report to the Government of Ivory Coast: Agricultural Research in Ivory Coast (G204/A50/ISNAR/R7AE).
1984. Plan de Développement du CIRES (G204/CIRES/Plan/84).
- The National Agricultural Research Systems of West and Central Africa. (G100/A01/CAS/95).

Djibouti

**Name and address of the national
agricultural research agency**

Ministère du l'Agriculture et du Développement
Rural (MADR)
P.O. Box 453
Djibouti
Tel. +253 3511774
Telex 5811 DJ

Notes

No reliable and current information is available.

Other references

1986. Oxford Forestry Institute. Djibouti Report:
Component of the World Bank Sub-Saharan
African Agricultural Research Review.
1993. East African Framework for Action Initia-
tives for Strengthening Agricultural Re-
search: Synthesis Paper
(GB2/A50/BUR/93).

Equatorial Guinea

Name and address of the national agricultural research agency Ministerío de Agricultura Ganadería y Desarrollo Rural (CENIDA) Carratera a Lubo S/N Malabo Tel 2150/3464	Overall priorities not known Research program priorities 1. Food crops 2. Fruit 3. Livestock
Name of document(s) and year of publication The National Agricultural Research Systems of West and Central Africa (1995).	Notes There is limited information on national agricultural research priorities in Equatorial Guinea.
Support for the document FAO	ISNAR call no./document location G100/A01/CAS/95
Objectives of the document to review the programs and organization of agricultural research in West and Central Africa	

Eritrea

Name and address of the national agricultural research agency

Department of Agricultural Research (DARES)
Ministry of Agriculture
P.O. Box 4627
Asmara
Director: Dr. T. Mesghena
Tel. +291 1 181499/181077
Fax. +291 1 181415

Name of document(s) and year of publication

Medium Term Plan and Strategy for National Agricultural Research 1995–2000 (Draft) (1995).

Support for the document

Assistance was received from ISNAR with funding from

1. Italian government through the FAO Investment Centre
2. World Bank

Objectives of the document

1. to present the goals, objectives, and strategies for agricultural research illuminated during the strategic planning process
2. to guide the Division of Research and Extension in its use and allocation of research resources
3. to allow government and its partners to coordinate investments in agricultural research that conform to national goals and policies and meet farmers needs

Overall priorities for national agricultural research

1. applied and adaptive research on crops, livestock, and natural resource management towards the policy objective of food security
2. a holistic approach to research activities defined and organized using the approach of production systems programs and agroecological zones in order to simplify research beyond the commodity level into areas of national resource management and incorporation of topics such as soil and water management, conservation, socio-economic topics, and forestry/agroforestry

on-farm research and farmer participation will be the basis for research project planning and direct feedback on relevance

Research program priorities

1. Production systems priorities
 - crop, livestock
 - small-scale irrigated horticulture
 - commercial farming
 - rainfed cereal/pulse
 - agropastoral
 - semicommercial peri-urban livestock
2. Crops
 - cereals: sorghum, pearl millet, barley, wheat, finger millet
 - pulses: chickpea, lentil, field pea
 - oil seeds: sesame
 - fiber crops: cotton
 - vegetables: potato, tomato, pepper, onion
 - fruits: banana, citrus
3. Livestock
 - sheep
 - goats
 - dairy: cattle and goats
 - cattle
 - poultry
 - camels
 - fodder
 - range management
4. Forest/natural resources
 - natural forest regeneration
 - plantation forest: fuel, timber, gum, and incense species
 - agroforestry
5. Wildlife
 - mammals
 - birds
 - reptiles and amphibians

Notes

This is a confidential draft report.

ISNAR call no./document location

Not yet cataloged.

Ethiopia

Name and address of the national agricultural research agency

Institute of Agricultural Research (IAR)
P.O. Box 2003
Addis Ababa
Tel. +251 1 612633-41
Fax. +251 1 611222
Telex 21548/ 21749 IAR-ET
General Manager: Gebremedhin G.

Name of document(s) and year of publication

1. Institute of Agricultural Research: Its Role in the Development of Ethiopian Agriculture (Workshop Report) (1995).
2. Institute of Agricultural Research Priority Setting Document 1993–1997 (1993).

Support for the document

This is an IAR document.

Objectives of the document

1. to present the goals of the national agricultural sector and the activities of IAR

Overall priorities

2. to help the country use efficiently its natural resources and meet its demand for food and raw materials both in quantity and quality by generating and developing appropriate agricultural production technology
3. to help increase the country's foreign exchange earnings by generating technologies that can improve the productivity of exportable agricultural commodities.

Research program priorities

1. Food crops

- teff
 - maize
 - wheat
 - sorghum
 - barley
 - enset
 - Vegetables
 - faba bean
 - noug
2. Industrial/exports
 - coffee
 3. Livestock
 - dairy
 - meat
 - draught
 4. Engineering
 5. Economics
 6. Soils and natural resources

Notes

A priority-setting document has not yet been produced.

ISNAR call no./document location

G136/A01/IAR/86

Other references

1994. An Economic Development Strategy for Ethiopia (not yet cataloged).
1995. Ethiopian Agriculture Resources, Performance and Constraints (not yet cataloged).
ISNAR. Program Management and Manpower Planning in the Institute of Agricultural Research in Ethiopia (O/ISNAR/G136/R26).

Gabon

Name and address of the national agricultural research agency

Institut de Recherche Agronomique et de Forestiers (IRAF)
P.O. Box 2246
Libreville
Tel. +241 732565/732532
Fax. +241 743499
Telex (0973) 5489 CAISTAB
Director General: Dr. J.J. Nengo

Name of document(s) and year of publication

The National Agricultural Research Systems of West and Central Africa (1995).

Support for the document

This an FAO document.

Objectives of the document

to review the programs and organization of agricultural research in West and Central Africa (Gabon)

Overall priorities

Not known.

Research program priorities

1. Food crops
 - manioc and taro
 - maize

- sweet potato
- groundnut
- banana and plantain

2. Fruit

- citrus
- avocado
- mango

3. Industrial crops

- rubber

4. Livestock

5. Forestry

Notes

Existing research programs have very low yields (FAO, 1995). Limited information on national agricultural research priorities in Gabon is available.

ISNAR call no./document location

G100/CAS/95

Other references

ISNAR/Van Dijk. Looking for Clues: Organizational Structure of NARS in West Africa (G190/RM4/DIJ/86).

Gambia

Name and address of the national agricultural research agency

Department of Agricultural Research (DAR)
Ministry of Agriculture
Quadrangle
Banjul
Tel. +220 28291-4
Fax. +220 96030
Director: Dr. M.M. Darbo

Name of document(s) and year of publication

Putting Farmers First. Agricultural Research in The Gambia (1990).
ISNAR/USAID. Agricultural Research Priorities in The Gambia (1985–89).

Support for the document

Document 1 was completed with the assistance of ISNAR. Document 1 was supported by
1. USAID
2. World Bank

Objectives of the document

1. to provide a brief overview of the major concerns facing Gambian farmers
2. to outline how the current and proposed research program is responding to these challenges

Overall priorities for national agricultural research

3. to provide farmers with affordable options through adaptive research on expanded and diversified agriculture
4. to conduct research that reduces or eliminates constant decline in soil fertility and

that increases agricultural productivity and food self-sufficiency

Research program priorities

1. Cereals
 - millet
 - sorghum
 - maize
2. Groundnuts
3. Vegetables
4. Livestock
 - cattle
 - donkeys
 - goats
 - poultry

Notes

Creation of a coordinating institution for the NARS has been under consideration. Document 1 is a summary of activities and not a detailed plan. The Gambia has completed a priority-setting exercise with ISNAR's assistance.

ISNAR call no./document location

1. G198/A50/NARB/90
2. G198/RMI/CEE/PP16

Other references

1991. USAID. Project Assistance Completion Report. The Gambia Agricultural Research and Diversification Project (Not Available).
1990. Zuidema, L. Report on Human Resources in The Gambia (G198/RM2/ZUI/90).
1989–90. DAR. DAR Programs (G198/DAR/BS89-90).

Ghana

Name and address of the national agricultural research agency

Centre for Scientific and Industrial Research (CSIR)

P.O. Box M. 32

Accra

Tel. +233 21 774772 or 777651/2

Fax. +233 21 777655 or 227656

Deputy Director General: Prof. J.C. Norman

Name of document(s) and year of publication

National Agricultural Research Strategic Plans

Vol I: Final Report & Vol. II: Project Profiles,

Cost and Analysis of Funding (1994).

Support for the document

Advisory services were received from ISNAR with funding from

1. British government (ODA)
2. World Bank

Objectives of the document

To contribute to a more effective and efficient research system by

1. identifying highest priorities for development and research programs to support them
2. involve scientists, planners, and policymakers at all stages of the planning process to ensure long-term commitment
3. ensure stability of the research system through acceptable levels of national and international funding
4. bring scientists into the planning process to increase understanding and commitment in the institutions

Overall priorities for national agricultural research

1. institution building

2. financial resource development and sustainability
3. program formulation and research which addresses the following goals: increased production of food and raw materials, improved food accessibility and quality, improved equity in terms of regional development, and better management of the natural resource base.

Research program priorities

1. Food crops
 - cereals: maize, millet, rice, sorghum
 - legumes: cowpea, groundnut
 - roots and tubers: cassava, cocoyam, yam
2. Plantation/industrial
 - oil palm
3. Livestock
 - cattle
 - goats and sheep
 - poultry
4. Fish
 - freshwater
 - marine
 - ISNAR call no./document location
 - Not yet cataloged.

Other references

1990. Ghana Strategy for Rehabilitation of the Agricultural Research System: Management and Plan Outline (G200/A50/STRAT/90).
1989. ISNAR/CSIR Review of National Agricultural Research System: Vol. 1: Report (G200/A50/Survey/89).
1989. National Science and Technology Policy and Plan Proposals. A Report of the Sectoral Technical Committee on Agriculture, Fish and Forestry (G200/A01/CSIR/89).

Guinea-Bissau

Name and address of the national agricultural research agency

Instituicao Nacional de Pesquisa Agraria (INPA)
C.P. 505
Bissau
President: Dr. D. Rodrigues
Tel. +245 214438
Fax. +245 221060/221072/201687
Telex 275 MIPLAN BI

Name of document(s) and year of publication

Linhas Directrizes para o Desenvolvimento da Pesquisa Agricola Nacional na Guiné Bissau (1991).

Support for the document

ISNAR provided advisory services.

Objectives of the document

1. to serve as a basis for decision making in agriculture, legislation for agricultural development, and all other institutional developments in the Instituicao de Pesquisa
2. to elaborate a plan for national agricultural research

Overall priorities for national agricultural research

1. to increase production for food self-sufficiency

2. to increase exports while promoting private entrepreneurship and incentives
3. to conserve the productive capacity of natural resources

Research program priorities

1. Rice
2. Other cereals
3. Tubers
4. Food legumes
5. Fruits and vegetables
6. Irrigation
7. Fertilizers
8. Integrated agriculture
 - crops, fisheries and forestry

Notes

Ministry of Agriculture programs have many operational difficulties and have all but collapsed (pers. comm. D. Boughton, Michigan State University).

ISNAR call no./document location

O/ISNAR/G216/91

Other references

1992. ISNAR. Brief Notes on the National Agricultural Research System of Guinea-Bissau (Workshop Paper) (G216/A50/SCH/92).

Guinea

Name and address of the national agricultural research agency

Institut de Recherche Agronomique de Guinée (IRAG)
BP 561
Conakry
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Fax. +224 442021
Telex 22338 IRAG GE
Director General: Dr. S. Cissé

Name of document(s) and year of publication

Lignes Directrices de Développement de l'Institut de Recherche Agronomique de Guinée et Esquisse de Programme de Recherche à Longe Terme (1989).

Support for the document

Assistance was received from ISNAR with joint funding from

1. World Bank
2. French government
3. European Economic Community
4. IFAD

Objectives of the document

1. to identify the major constraints in agricultural research
2. to develop a progressive structural research plan
3. to identify the priority research programs with the participation of national stakeholders and principal partners and clients of the research
4. to propose immediate and intermediate actions to strengthen the organizational capacity and training at IRAG.

Overall priorities for national agricultural research

1. adaptive research (especially for phase I) that applies or modifies the best existing technology and information from Guinea or other parts of the West African region
2. applied research that will resolve specific constraints in present and future production, using a systems approach for each research program and taking into account the means and conditions of farmers

Research program priorities

1. Rice
 - dryland
 - irrigated
2. Other cereals
 - maize
 - fonio
3. Tubers
 - manioc
 - potato
4. Legumes
 - groundnut
 - cowpeas
5. Vegetables
6. Industrial crops
 - cotton
7. Fruits and horticulture
8. Perennials
 - coffee
9. Livestock
 - cattle
 - small ruminants
10. Forestry and agroforestry
11. Production systems
 - natural resource conservation: protection and conservation of soils, protection of genetic resources
 - socioeconomics: mangrove ecology, rural economy, rural sociology, research systems

Notes

This is a 1989 document, but some parts of the 1994 document below were used to update this information.

ISNAR call no./document location

G202/IRAQ/ISNAR/R44

Other references

1994. ISNAR/Bosso. Seconde Phase des Projets du Secteur Agricole (PSA 2) La Composante Recherche: Bilan Diagnostic et Actions Préparatoires (G202/RM4/BOS/94).
1992. Analyse de la Préoccupation Gestion des Ressources Humaines Vue par l'Encadrement Scientifique à l'INRA. (G202/RM2/DIA/92).

Kenya

Name and address of the national agricultural research agency

Kenya Agricultural Research Institute (KARI)
P.O. Box 57811
Nairobi
Tel. +254 2 444144
Fax. +254 2 440771
Telex 25287 KERRI HQ KE
Director: Dr. C. Ndritu

Name of document(s) and year of publication

1. Kenya Agricultural Research Strategy; Vol I: Organisation and Structure; Vol II: Priorities and Programs (1987/88–1992/93)
2. Research Priorities to the Year 2000

Support for the document

Assistance was received from ISNAR with funding from

1. World Bank
2. United Kingdom
3. GTZ

Objectives of the document

1. to review the organization, management, and programs of agricultural research in Kenya
2. to present a comprehensive medium-term national research strategy and plan

Overall priorities for national agricultural research

1. increased food production
2. growth in agricultural employment
3. expansion of agricultural exports
4. resources conservation
5. poverty alleviation.

Research program priorities

1. Conservation of resources
 - establish national soil/water management research center

- farming systems research in dryland areas
 - investigation of livestock systems in pastoral regions
 - generation and application of improved technologies for increased crop and livestock production in major zones of agricultural potential
2. Crop and livestock research
 - high yielding varieties of maize and wheat, sorghum and millet
 - pulses
 - edible oil-producing crops
 - horticultural crops for industrial and domestic use/conservation
 - integrated crop, livestock systems
 - animal nutrition for grade dairy cattle and ruminant livestock
 - veterinary research, particularly breeding, major epidemic diseases and parasites

Notes

This is a 1987 document. Planning for the second edition of the NARP II is in progress.

ISNAR call no./document location

1. VOL I: O/ISNAR/GI140/85; VOL II: O/ISNAR/G140/R24
2. G/140/KARI/RM1/91

Other references

1994. ISNAR/KARI. Priority Setting into the 21st Century. A Position Paper by the Priority Setting Working Group. (G140/RM1/KARI/94).
1991. KARI. A Strategic Plan for Agricultural Research in Kenya. (G140/RM1/MAJ/91).

Lesotho

Name and address of the national agricultural research agency

Ministry of Agriculture, Cooperatives, Marketing and Youth Affairs
P.O. Box 24
Maseru - 100
Lesotho
Director: Dr. S.L. Ralitsoele
Tel: 266/312395
Fax 266/310362

Name of document(s) and year of publication

Review of Lesotho's Agricultural Research System (1989).

Support for the document

Assistance was received from ISNAR with funding from USAID

Objectives of the document

1. to summarize the results of an ISNAR mission to Lesotho to review agricultural research capacity in relation to the priority needs of the country
2. to provide a framework for efficient use of resources and viable scope and size for a sustainable research system

Overall priorities for national agricultural research

1. self-sufficiency in basic foodstuffs
2. conserve the natural resource base
3. increase farmers' incomes and raise the productivity and profitability of agriculture
4. identify new high-value crops and agricultural products and diversify the base of production and sources of income
5. increase employment opportunities in rural areas.

Research program priorities

1. Cereals
 - maize
 - sorghum
 - wheat
2. Food legumes
 - beans
 - peas
 - production systems: to maximize multi-purpose uses
3. Fruits and vegetables
4. Livestock
 - sheep and goats
 - cattle
 - range management
 - fodder production
5. Natural resource management
 - soil and water management
 - agroforestry

Notes

Lesotho recently initiated a strategic planning and priority-setting process.

ISNAR call no./document location

G162/A50/ISNAR/R48E

Other references

1992. Okello/Eyzaguirre. ISNAR-NARS in Regional Context (O/ISNAR/SCP/SP7).
1991. Agricultural Development in the SADCC Countries: A Bibliography: Vol. 3 Lesotho (G162/A01/CTA/91).
1991. ISNAR (G. Norton). Methods for Agricultural Research Priority Setting: Implications for Research Planning in Southern African Countries.
1991. National Forestry Research Action Plan (G162/KO1/PLAN/92D).

Liberia

Name and address of the national agricultural research agency Central Agricultural Research Institute (CARI) P.O. Box 3929 Monrovia 10 Tel. +231223443 Telex 44265 LTC GBA LIB	Notes No reliable and current information is available. Other references 1995. The National Agricultural Research Systems of West and Central Africa. FAO (G100/A01/CAS/95).
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Madagascar

Name and address of the national agricultural research agency

Centre National de la Recherche Appliquée au Développement Rural (FOFIFA)
BP 1739
Antananarivo
Tel. +261 2 25676 or 25679 or 27182
Fax. +261 2 25926
Telex 22591 CIRAD MG
Director: Roger Andrianosolo

Name of document(s) and year of publication

Actualisation du Plan Directeur de la Recherche Agricole 1994–2004 (1994).

Support for the document

Advisory services were received from ISNAR with funding from World Bank

Objectives of the document

1. to define the long-term (10-year) objectives and scientific strategies of FOFIFA
2. to familiarize agencies within and outside FOFIFA with these objectives and strategies
3. to coordinate and prepare for the design of a national action plan

Overall priorities for national agricultural research

1. to follow a regional approach

2. to pursue multidisciplinary, integrated research and development priorities

Research program priorities

1. Meat and milk production
2. Rice and soil conservation
3. Coffee
4. Maize
5. Tubers
6. Groundnut
7. Fisheries
8. Cotton
9. Forestry
 - resins and plantations
 - natural forest conservation
10. Spices
 - vanilla
 - pepper

ISNAR call no./document location

G164/MRAD/PLAN/94

Other references

1994. IFAR. Agricultural Research in Madagascar: Role of International Centers (G164/IFAR/94).
ISNAR/Ravohitrarivo. Planification de la Recherche Agricole: Le Cas de Madagascar (10/ISNAR/G164/WP39).

Malawi

Name and address of the national agricultural research agency

Ministry of Agriculture and Livestock Development
Department of Agricultural Research (DAR)
P.O. Box 30779
Lilongwe
Tel. +265 784299
Fax. +265 784450
Telex 44648 MINAGRIC MI
Chief Agricultural Research Officer: Dr. A.S. Kumwenda

Name of document(s) and year of publication

Agricultural Research Masterplan 1988–98 (1988).

Support for the document

USAID

Objectives of the document

1. to identify and review the priorities and programs of DAR
2. to examine resource allocation and management procedures
3. to strengthen linkages, especially between research and extension programs

Overall priorities for national agricultural research

1. decentralize research and strengthen client orientation
2. reorganize the research structure to ensure cost effectiveness
3. improve coordination of the activities within a unified agricultural research organization
4. expand participation in agricultural research by a range of public and private sector agencies

Research program priorities

1. Food crops
 - maize
 - roots and tubers
 - wheat
 - groundnuts
 - rice
 - sorghum and millet
2. Cash crops
 - cotton
 - tree nuts
3. Livestock
4. Agroforestry
5. Soils
6. Engineering

Notes

An updated and revised research master plan for the period 1994–2004 is being developed but is not yet available.

ISNAR call no./document location

G166/DAR/PLAN/88D (DRAFT)

Other references

1992. Structural Options for Agricultural Research: Feasibility Study (G166/A01/DAR/FS92).
1991. Report on the Malawi Department of Agricultural Research Master Resource Plan with Special Reference to Priorities and Resource Allocation (G110/DAR/RM1/GAM).
- ISNAR. Report to the Government of Malawi: A Review of the Agricultural Research System of Malawi. (O/ISNAR/G166/R8).

Mali

Name and address of the national agricultural research agency

Institut d'Economie Rural (IER)
Ministère de l'Agriculture
B.P. 258
Bamako
Tel. +223 222606 or 222413
Fax. +223 222375 or 227637
Telex Public No. 1200
Director General: El Hadj Omar Tall

Name of document(s) and year of publication

Plan Stratégique de la Recherche Agronomique du Mali: Options de Développement pour l'IER 1992–2004 (1994).

Support for the document

Assistance was received from ISNAR.

1. USAID
2. World Bank
3. Netherlands government

Objectives of the document

1. to assess the technical and financial resources required for agricultural research
2. to determine the scope of activities in the various programs and the division of resources between the programs
3. to elaborate a mandate and structure for re-organizing IER and a national research program

Overall priorities for national agricultural research

1. to define and create research results which can be used in extension
2. to identify priorities for research which will have long term considerations
3. to consider the financial implications of implementing the research
4. to coordinate and harmonize the relations between research and extension

Research program priorities

1. Cereal and food legumes
 - rice
 - maize
 - millet
 - sorghum
 - groundnut
 - cowpeas
2. Industrial crops
 - cotton
3. Fruits and horticulture
 - vegetables
 - bananas
 - citrus
4. Livestock
 - cattle
 - small ruminants
 - poultry
5. Forestry
6. Pisciculture
7. Production systems and rural economy
8. Natural resource management
 - soil conservation
 - irrigation rehabilitaton

Notes

This plan is considered to be one of the more progressive and participatory processes in master planning.

ISNAR call no./document location

G208/IER/PLAN/91D AND
G208/A50/PLAN/92-1.

Other references

1990. Analyse du Système National de Recherche Agronomique du Mali (G208/A50/ISNAR/R46F).

Mauritania

Name and address of the national agricultural research agency

Direction de la Recherche Formation-Vulgarisation (DRFV)
Ministère du Développement Rural et l'Environnement (MDRE)
B.P. 175
Nouakchott
Tel. +222 251567
Fax. +222 257163 or 53997
Director: Dr. Ely Ould Ahmedou

Name of document(s) and year of publication

Plan National de Recherche Agricole (1995–2004) (2 Vols.).

Support for the document

Advisory services were received from ISNAR with funding from World Bank

Objectives of the document

1. to present the national agricultural research plan and its long-term activities
2. to elaborate a plan aimed at better growth within the agricultural sector while at the same time improving coordination of various partnerships within the NARS

Overall priorities national agricultural research

1. to increase the rate of food self-sufficiency within the various subsectors
2. to strengthen food security, in particular the development and diversification of agriculture with full or partial management of water resources
3. to improve the standards of living and incomes for rural people especially through water development and increases to productivity
4. to protect the environment and value natural resources

5. to improve rural employment and reduce outmigration

Research program priorities

1. Sylvo-pastoral
 - forest and rangeland management
 - animal production and health
 - cereal and legume production
2. Irrigation
 - crop diversification
 - integrated agriculture/livestock environments
 - intensification of rice cultivation
3. Rainfed agriculture
 - improvement of rainfed crops
 - natural resources
 - animal health and production
 - sorghum
4. Oasis agriculture
 - natural resources
 - diversification
 - phoeniciculture
5. Peri-urban agriculture
 - animal health and production
 - horticulture

Notes

The plan was finalized in 1995. This is only a draft copy.

ISNAR call no./document location

G210/MDRE/PLAN/95-2004 (Annexes).

Other references

1993. ISNAR. La Recherche Agricole En Republique Islamique De Mauritanie Bilan-Diagnostic Et Propositions De Renforcement ISNAR (G210/A50/HOS/93).
1992. ISNAR. Breve Presentation du Systeme National de Recherche Agronomique de Mauritanie (G210/A50/CAS/92).

Mauritius

Name and address of the national agricultural research agency

Directorate of Research and Extension (DARE)
Ministry of Agriculture, Fisheries and Natural Resources
Redit
Tel. +230 541091
Fax. +230 464749
Telex 4249 or 4887 Sugauth
Deputy Director: Dr. G.M. Lallamohomed

Name of document(s) and year of publication

Management of Scientific Information for Agricultural Research in Mauritius (1992).

Support for the document

This report is part of the ISNAR Small Countries Project.

Objectives of the document

1. to describe the information approaches to support agricultural research in Mauritius
2. to identify the major issues addressed by research managers and information specialists

Overall priorities for national agricultural research

The priorities for the NARS reflect agricultural development policy aimed at

1. improving the international competitiveness of the sugar industry
2. better use of sugar by-products
3. quality improvement in tea
4. food security
5. cost effectiveness of irrigation operations
6. mechanization

Research program priorities

1. Agronomy
 - tea
 - tobacco

- mushroom
 - root crops: cassava, sweet potato
 - pulses: peas, beans and cowpea
 - fodder
 - wheat, rice and cotton
 - management
2. Horticulture
 - fruits
 - vegetables
 - ornamentals
 3. Livestock
 - animal nutrition
 - animal management: milk, meat
 - veterinary
 4. Sugar (separate institute)
 5. Socioeconomics (university-based program only)
 6. Forestry
 7. Fisheries

Notes

Mauritius produced a master plan for agricultural information in 1993. NARS institutes in Mauritius do not have a separate coordinating body, although the Ministry currently plays this role. Information is still forthcoming from Mauritius on the status of their planning activities.

ISNAR call no./document location

G168/RM8/NG/925

Other references

1994. Workshop on Policy on Agricultural Information in National and Regional Levels for East African Countries: Strategies and Resources (G132/RM8/CTA/94).
1993. MAFNR. Information Technology Masterplan for the Ministry of Agriculture, Fisheries and Natural Resources (Draft) (Not Available).

Mozambique

Name and address of the national agricultural research agency

Instituto Nacional de Investigaçao Agronomica
C.P. 3658
Maputo
Tel. +258 1 460097/100
Fax. +258 1 4600220 Or 460074
Telex 6166 SEEDS MO
Director: Mr. Carlos B. Zandamela

Name of document(s) and year of publication

1. INIA Medium-Term Strategy and Plan (1993/4–1998)
2. INIA Research Operational Plan (1994–2000)

Support for the document

Advisory services were received from ISNAR with funding from the Swedish government

Objectives of the document

1. to present the medium-term plan developed by INIA
2. to guide the use and allocation of resources for research
3. to allow government and donors to make reasoned, coordinated investments in agricultural research that are oriented toward development goals and farmer needs

Overall priorities for national agricultural research

1. to achieve food security
2. to create reserve food supplies considering the demographic trends
3. to achieve a sustainable independence from imports
4. to improve employment and self-employment

Research program priorities

1. Crop research
 - maize
 - cassava
 - sorghum
 - rice
 - sweet potato
 - cowpea
 - common bean
 - millet
 - cashew
2. Farming systems
3. Export/cash crops
 - cotton
4. Horticulture and fruiticulture

Notes

Priorities for the medium-term plan are reviewed here. The operational plan provides a longer-term perspective and more detail on the same research programs. However, the Government of Mozambique considers that these priorities may be subject to further change. The research strategy outlined in the medium-term plan has several sections on relating national, regional, and institutional objectives for research. Research priorities for both crops and program groupings are related to ecoregional planning and experimental centres. WB was negotiating with UNDP for an agricultural sector (investment) plan for Mozambique.

ISNAR call no./document location

1. G172/INIA/MTP93
2. G172/INIA/ROP94-00

Other references

1992. Plano Nacional de Investigaçao Florestal (G172/K01/PLAN/92D).

Namibia

Name and address of the national agricultural research agency

Department of Agriculture and Research and Training (DART)
Private Bag 13184
Windhoek
Tel. +264 61 224550 or 3029111
Fax. +264 61 222974 or 222830
Director: Mr. Nico de Klerk

Name of document(s) and year of publication
(Draft) National Agricultural Research Plan (1996–2000).

Support for the document

Assistance was received from ISNAR with funding from the United Kingdom (ODA)

Objectives of the document

to present the findings and recommendations of a process to reformulate national agricultural research in Namibia, particularly within the perspective of natural resource management.

Overall priorities for national agricultural research

1. to assist in increasing the flow of research results to farmers and assist the government and farmers in better managing the fragile natural resources of Namibia
2. to support government policy aimed at improving equitable national agricultural development and research to strengthen this development through better natural resource management.
3. to emphasize support to communal farmers without neglecting research needs of national or commercial farmers
4. to reorganize the national research agency and establish improved linkages with all parties involved in natural resource management

Research program priorities

1. Agroecology farming systems
 - soil and water management
 - agroforestry
 - farming systems research
2. Food crops, cereals and horticulture
 - pearl millet: breeding varietal trials
 - fruit: varietal trials, adaptive research
 - vegetables: varietal trials, adaptive research
3. Small stock
 - preservation of genetic materials
 - breeding systems and selection criteria
 - herd management
4. Large ruminant
 - preservation of genetic materials
 - breeding systems and selection criteria
 - herd management
5. Pasture science
 - pasture rehabilitation, bush control
 - pasture management systems
6. Poultry/ostrich
 - flock management
 - nutrition: extension system for ostriches

Notes

The plan referred to here refers only to crops and livestock. Other agencies dealing with natural resource management in Namibia would also develop plans that would embody a final national master plan under the proposed creation of a national research council.

ISNAR call no./document location

Not yet cataloged.

Other references

1993. ISNAR. Review of the Agricultural System of Namibia (O/ISNAR/G170/R56).
1992. Ministry of Agriculture Development Plan for Forestry and Forest Products Research in Namibia (G170/K01/PLAN/92D).

Niger

Name and address of the national agricultural research agency

Institut National de Recherches Agronomiques
au Niger (INRAN)
BP 429
Niamey
Tel. +227 722714 or 722719
Fax. +227 722144
Telex 214235 Attnmix: INRAN
Director General: Dr. Gouro S. Abdoulaye

Name of document(s) and year of publication

Programme de Developpement de la Recherche
Agronomique du Niger Vol I: Analyse du
Systeme National de Recherche Agronomique;
Vol. II: Proposition d'un Plan National a Long
Terme (1989).

Support for the document

Assistance was received from ISNAR with
funding from World Bank

Objectives of the document

1. to analyze and review the major characteristics and institutions of the NARS
2. to describe proposals for improving research
3. to establish a medium-term action program and to elaborate a long-term plan for research

Overall priorities for national agricultural research

1. applied research, responsive to agricultural policy which has the following goals: stabilization of food production, improve animal production, conserve natural resources, and balanced regional policy development
2. improve national system of agricultural research including coordination and collaboration with other national and international institutions; improve use of human and financial resources by assigning priorities to research planning, size, and regional focus of research teams

3. integrate socioeconomic and technical priorities in research
4. food production for domestic use and export and regional basis for food production/consumption concerns
5. the capacity of research to contribute to development and natural resource conservation

Research program priorities

1. Rainfed agriculture
 - millet
 - sorghum
 - cowpeas
 - groundnut
2. Irrigated agriculture
 - rice
 - manioc
 - homegardens
3. Livestock
 - cattle
 - goats
 - poultry
 - camels
4. Environment
 - forests
 - fish and wildlife
5. Production systems
 - rural economy
 - soil pedology and management

Notes

Niger has a very integrated approach to defining its research programs. Closely defined priorities are not evident in this document.

ISNAR call no./document location

G212/A50/ISNAR/R36F

Other references

1991. ISNAR. Atelier de Travail de l'INRA du Niger sur les Modalités de Mise en Oeuvre du Plan Directeur de la Recherche Agronomique (G212/A50/ISNAR/91).

Nigeria

Name and address of the national agricultural research agency

National Council for Agricultural Research
Federal Ministry of Agriculture, Water Resources and Rural Development

Garki

Abuja

Tel. +234 1 632387 or 630134

Director General: Dr. H. Mamza

Director of Agricultural Sciences: Dr. A. Aliyu

Name of document(s) and year of publication

Nigeria National Agricultural Research Strategy Plan: 1996-2010. Department of Agricultural Sciences, Federal Ministry of Agriculture and Natural Resources. Abuja, Nigeria. 1997.

Nigeria Medium-Term Research Plans: 1996-2000. Department of Agricultural Sciences, Federal Ministry of Agriculture and Natural Resources. Abuja, Nigeria. 1997.

Support for the document

World Bank

Objectives of the document

1. to examine and assess the NARS
2. to strengthen the reorganization of agricultural research in the country.

Overall priorities for national agricultural research

No reference made to general priorities.

Research program priorities

1. Cereals
 - sorghum
 - millet
 - wheat
 - rice
 - maize
2. Grain legumes
 - soybeans

3. Plantation/industrial crops

- cotton
- rubber
- coffee
- tea
- oil palm
- coconut

4. Roots and tubers

5. Livestock production

- veterinary
- animal health/nutrition

6. Horticulture

7. Fisheries

- inland fish
- oceanography

8. Food technology

9. Forestry

Notes

Nigeria has the largest and most complex NARS in SSA. It comprises four sets of institutions with various supervisory agencies. The organization of a national agricultural research council is in progress.

ISNAR call no./document location

G214/RM1/89

Other references

1995. ISNAR. Strengthening the Role of Ahmadu Bello University in the National Agricultural Research System of Nigeria: Recommendations and Short Term Action Plan (G214/A50/FMANR/95).

1990. ISNAR. Managing the Links Between Research and Technology Transfer: The Case of the Agricultural Extension Liaison Service in Nigeria (O/ISNAR/G214/LDP6).

Rwanda

Name and address of the national agricultural research agency

Institut des Sciences Agronomiques du Rwanda (ISAR)
BP 138
Butare
Tel. +250 33311
Fax. +250 33312
Telex 22604 PUB BTE RW ISA
Research Officer: I.K. Nyagahungu

Name of document(s) and year of publication

1. Plan Directeur National de la Recherche Agricole 1990–2000 (1989).
2. Planification Pruriannuelle des Programmes 1993–2003 (1993).

Support for the document

Advisory services received from ISNAR with funding from World Bank

Objectives of the document

1. to set out priorities and research themes developed from an analysis of field-based experiences
2. to evaluate research and identify methods of addressing problems and constraints.

Overall priorities for national agricultural research

1. to address the problems of food security and self-sufficiency
2. to intensify domestic and export-based agricultural production while protecting the natural resource base
3. to regionalize and rationalize the research structure.

Research program priorities

1. Soil conservation and improvement
2. Bean
3. Soya bean

4. Sorghum
5. Maize
6. Wheat
7. Rice
8. Sweet potato
9. Potato
10. Manioc
11. Banana
12. Coffee
13. Sugar cane
14. Tea
15. Reforestation
16. Agroforestry
17. Natural forest protection
18. Cattle
19. Small ruminants
20. Socioeconomics
21. In vitro culture and germplasm conservation

Notes

Rwanda is currently considering revision of its existing plan but due to civil strife in the country no definite action has yet been taken.

ISNAR call no./document location

1. G126/ISAR/PLAN90-2000
2. G126/MINAGRI/PLAN94-2003

Other references

1991. USAID/Winterbottom. Natural Resource Management and Environmental Issues in the Implementation of Rwanda's Agricultural Research Masterplan.
1989. ISNAR. Une Methode Raisonnée de Motation pour la Sélection des Programmes Prioritaires du Plan Directeur de la Recherche Agricole du Rwanda (O/ISNAR/SN89-60).
1987. Preparation du Plan Directeur 1987–2000 de la Recherche Forestiere au Rwanda (G126/K01/PLAN/SOR).

São Tomé & Príncipe

Name and address of the national agricultural research agency

Directorate of Agricultural Research Centers (DCPA)
Ministerio da Agricultura Estacao Experimental
CP 157
São Tomé
Tel. +239 15
Telex MINAGRI 230
Director: Tomas Cardoso

Name of document(s) and year of publication

National Agricultural Research Systems of West and Central Africa (1995).

Support for the document

This is an FAO publication.

Objectives of the document

to report on a study of NARS in West and Central Africa

Overall priorities for national agricultural research

1. to diversify agricultural production in São Tomé and Príncipe
2. to support the rehabilitation of industrial plantations and increase export production

Research program priorities

1. Food crops
 - banana
 - beans
 - maize
2. Citrus
3. Coffee
4. Cacao
5. Livestock

Notes

São Tomé and Príncipe do not have a national master plan for agricultural research, and there are few current references for this country.

ISNAR call no./document location

G100/A01/CAS/95

Other references

1993. ISNAR/Eyzaguirre. The Independence of São Tomé and Príncipe and Agrarian Reform (G128/F01/EYZ/93).
FAO. La Recherche Agronomique a São Tomé et Príncipe(G128/A50/FAO/85).

Senegal

Name and address of the national agricultural research agency

Institut Senegalais de Recherches Agricoles (ISRA)
Ministère de l'Agriculture
B.P. 3120
Dakar
Tel. +221 322428 or 322430 or 322422
Fax. +221 322427
Director General: Dr. Moussa Bakhayokho

Name of document(s) and year of publication

Revue a Mi-Parcours de l'Institut Senegalais de Recherches Agricoles (ISRA) (1995).

Support for the document

Advisory services were received from ISNAR and funding from

1. World Bank
2. USAID
3. FAO
4. French government
5. IDRC

Objectives of the document

1. to review ISRA's activities and propose priorities and direction for future research
2. to evaluate the system in preparation for the development of a strategic plan
3. to develop ISRA's mandate for research on natural resource management

Overall priorities for national agricultural research

1. to achieve food self-sufficiency
2. to improve the balance between subsistence and commercial production

3. to guarantee income and livelihood stability to rural people
4. to rehabilitate degraded ecosystems and protect the environment

Research program priorities

1. Animal health production
2. Fisheries/pisciculture
3. Irrigated agriculture
4. Rainfed agriculture
5. Horticulture
6. Natural resources
7. Forestry
8. Communications

Notes

Senegal is developing a long-term strategic plan for agricultural research and this document should be released by April 1996.

ISNAR call no./document location

G218/ISRA/95

Other references

1994. Plan Diagnostic des Liaisons Recherche-Developpement et Propositions d'Actions (not yet cataloged).

1992. ISNAR. Developpement et Gestion des Ressources Humaines a l'Institut Senegalais de Recherches Agricoles (G218/ISRA/RM2/ISNAR).

Les Nouveaux Enjeux de la Gestion de l'Institut Senegalais de Recherches Agricoles (not yet cataloged).

Seychelles

Name and address of the national agricultural research agency

Ministry of Agriculture and Marine Resources
B.P. 166
Victoria
Tel. +248 225333
Fax. +248 225245
Director: Dr. Antoine Moustache

Name of document(s) and year of publication

1. Agricultural Sector Strategy (1989).
2. Managing Scientific Information in a Small Island Nation: The Seychelles Experience. ISNAR (1992).

Support for the document

Document 2 is an ISNAR publication.

Objectives of the document

1. to describe the existing research programs in the Seychelles
2. to examine the issues surrounding improvement to information services available for national agricultural research

Overall priorities for national agricultural research

1. increased food production
2. import substitution

3. productive employment creation
4. productive use of agricultural land
5. environmental conservation
6. earning foreign exchange
7. production of raw materials for agroprocessing

Research program priorities

1. Fisheries
 - catch and stock assessment
 - fisheries development
 - mariculture
2. Roots and tubers
 - cassava
 - taro
3. Vegetables and fruits
4. Livestock
 - forage

Socioeconomics

ISNAR call no./document location

Not available

O/ISNAR/SCP/SP5

Sierra Leone

Name and address of the national agricultural research agency

National Agricultural Research Coordinating Committee (NARCC)
P.M.B. 1313
Freetown
Tel. +232 222179 or 222794
Fax. +232 224439
Chief Executive: Dr. Rogers A.D. Jones

Name of document(s) and year of publication

National Agricultural Research Plan of Sierra Leone (1987).

Support for the document

Advisory services were received from ISNAR.

Objectives of the document

to provide an overview of NARCC principles, activities, and priorities for the five-year period

Overall priorities for national agricultural research

Applied research which contributes to

1. food production and procurement and, in particular, to reduce rice imports
2. cash crops, medicinal plants, and food technology

Research program priorities

1. Rice (highest priority)
2. Roots and tubers
 - cassava
 - sweet potatoes
3. Maize
4. Grain legumes

- cowpeas
 - groundnuts
 - beans
 - pigeon peas
 - soya bean
5. Tree/cash crops
 - coffee
 - cocoa
 - ginger
 - oil palm
 - breadfruit
 - coconut
 - kola nut
 6. Agroforestry and fuelwood production
 7. Fisheries and mariculture
 8. Livestock
 - breeding and management
 - animal feeds
 9. Socioeconomics

Notes

FAO (1995) indicates that forestry and livestock production research are neglected. This plan is expired in 1992.

ISNAR call no./document location

G220/A50/PLAN/87

Other references

1993. Linking Science and the Farmer: Pillars of the National Agricultural System in Sierra Leone. Small Countries Paper No. 10 (G220/A50/DAH/93).
ISNAR. Agricultural Research Activities in Sierra Leone (G220/A50/Geo/92).

Somalia

Name and address of the national agricultural research agency

National Agricultural Research Institute
Ministry of Agriculture
P.O. Box 24
Mogadishu

Name of document(s) and year of publication

The Strategic Update of Somalia's National Agricultural Research Plan (1990).

Support for the document

Advisory services were received from ISNAR with funding from World Bank

Objectives of the document

1. to provide a brief update on the Somalia agricultural research strategy and plan
2. to confirm that there are no major divergences from the 1984 research plan and that the document is still considered to be a viable and relevant plan for national agricultural research

Overall priorities for national agricultural research

1. to increase national investments in agricultural research
2. to establish a focal point for research in agriculture (ARI)
3. to improve the quality and quantity of research scientists through training and retention of researchers

Research program priorities

Research is planned within the groupings of three production environments:

1. Irrigated agriculture
 - maize
 - rice
 - fruits and vegetables
 - oil crops
 - food legumes
 - forages
 - associated production systems
2. Dryland agriculture
 - sorghum
 - grain legumes
 - oil crops
 - production and management systems
3. Highlands agriculture
 - wheat
 - sorghum
 - legumes
 - oil seeds
 - forage
 - horticulture
 - associated production systems

Notes

The official plan document is referenced below but has now expired. No recent information is available.

ISNAR call no./document location

O/ISNAR/G144/R50

Other references

Somalia's Agricultural Research Program Vol/I/II (1983-84) (G/144/A50/GOV/84).

South Africa

Name and address of the national agricultural research agency

Agricultural Research Council
Celtis Plaza
1085 Schoeman Street
P.O.Box 8783
Pretoria
Tel. +27 12 436210
Fax. +27 12 435814
Executive Director: Dr. J.H. Terblanche

Name of document(s) and year of publication

White Paper on Agriculture 1995.

Support for the document

This report is an internal document.

Objectives of the document

to present the principles for the development agricultural policy in South Africa

Overall priorities for national agricultural research

1. researchers, extension workers, and farmers should be a part of a dynamic, holistic system
2. research programs and technology development will be planned in collaboration with other support services and farmers
3. resource allocation to agricultural (and basic) research will be appropriately balanced and will take into account farmers' priorities
4. funding priority will be given to small-scale farming
5. research must be recognized as a long-term investment and is best achieved by cooperation between overnment, research institutions, farmer organizations and the private sector
6. the local knowledge of farmers will be recognized and validated and it will be ensured that the existing knowledge of farmers is complemented by research
7. the needs of farmer, especially new entrants and small-scale farmers, will be met through the reorientation and traing of extension of-ficers, trainers and researchers

8. new farming systems and appropriate technology must be developed to meet the needs of small-scale farmers
9. the important contibution of resource-poor farmers to livelihoods in rural areas will be recognized and supported
10. the additional work burdens and time constraints on women because of their domestic responsibilities will be accommodated and ameliorated in the design and delivery of services and infrastructure to resource-poor farmers
11. research and technology development will recognize food insecurity among South Africa's increasingly urbanized population.

Research program priorities

See notes below.

Notes

The White Paper policy statement defines principles and not program priorities. This would be the task of the ARC, which is currently in the process of redesigning its programs. ARC has not yet developed its new research priorities. The 1995 ARC/ODA/ Sussex University project report (referenced below) does present some of the potential priorities discussed with ARC which would re-orientate the Council's current research programs. These priorities relate primarily to reorganizing research to address the needs of small-scale farmers throughout the country.

ISNAR call no./document location

Library has uncataloged copy.

Other references

1994. ARC/ODA/Sussex University. Final Report on Reorientating the South African Agricultural Research System to Meet the Needs of Small Farmers (G178/A50/COR/95).
1994. Annual Report of the Agricultural Research Council.
1993. Agricultural Research (G178/DARS/93).

Sudan

Name and address of the national agricultural research agency

Agricultural Research Corporation
P.O. Box 126
Wadi Medani
Tel/Fax. (MoA) +249 11 7750586
Tel/Fax. (FAO Khartoum) +249 1174591
Telex 50009 BOWD SD
State Minister for Agriculture: Prof. A.A. Wahbi
Deputy Director General: Dr. Abdalla Mohamed Hamdoun

Name of document(s) and year of publication

Research Strategy for the Nineties and Beyond 1993–2003 (1994).

Support for this document

No information available on advisory services.
Funding received from the World Bank

Objectives of the document

description of a 10-year plan for research activities

Overall priorities for national agricultural research

1. focus on research activities that have domestic economic importance and export potential
2. ensure food security and self-sufficiency
3. improve the flow of relevant information to farmers

Research program priorities

1. Food crops
 - cereals: sorghum, millet

- roots and tubers: cassava, yams
 - vegetables
2. Cash/plantation crops
 - cotton
 - bananas
 - date palm
 - citrus
 - mangoes
 3. Livestock
 - cattle
 - sheep, goats
 - range
 4. Forestry
 5. Fisheries
 6. Soil and water resources

Notes

No official plan documents are available for Sudan.

ISNAR call no./document location

Not yet cataloged

Other references

1995. Sudan Reorganization of the Ministry of Agriculture, Report Prepared for the Government of Sudan, FAO (not yet cataloged).
ISNAR. Management of National Agricultural Research Systems in Selected Arab Countries: An Overview (ISNAR Report No. R57) (O/ISNAR/G000/94).

Swaziland

Name and address of the national agricultural research agency

Malkerns Research Station
Ministry of Agriculture and Cooperatives
P.O. Box 4
Malkerns
Tel. +268 444463
Fax. +268 83360
Chief Agricultural Research Officer: Mr. P.D. Mkhathswa

Name of document(s) and year of publication

1. Annual Research Proposals for 1992–93 (1992).
2. Managing Information Resources and Services for Agricultural Research in Swaziland (1992).

Support for the document

Document 2 is an ISNAR publication.

Objectives of the document

1. to discuss the programs in agricultural research in Swaziland
2. to assess national approaches to obtaining and managing scientific information for agricultural research

Overall priorities for national agricultural research

Applied research that ensures links with all national institutions and international networks and addresses the following development goals:

1. the achievement of basic food self-sufficiency
2. improving nutritional levels
3. increasing agricultural exports
4. boosting rural incomes
5. conservation and development of soil and water resources

Research program priorities

1. Cereals
 - maize
 - sorghum
 - millet
2. Grain legumes
 - beans
 - cowpeas
 - groundnuts
 - juko beans
3. Export crops
 - cotton
 - pineapples
 - citrus
4. Livestock
 - cattle
5. Socioeconomics and engineering
6. Natural resource management
 - plantation forestry (private-sector research only)

Notes

Swaziland does not have a national agricultural research plan but currently operates on rolling annual plans.

ISNAR call no./document location

1. G182/PLAN/91
2. G182/RM8/MAV/92S

Other references

1992. ISNAR. National Agricultural Research in a Regional Context: The Small Countries of Southern Africa (G154/A50/OKE/SPP7).
1992. National Forestry Research Plan (Draft) (G182/K01/PLAN/92D).
1991. ISNAR. Priority Setting in Agricultural Research (G154/RM1/NOR/91).

Tanzania

Name and address of the national agricultural research agency

Department of Research and Training
Ministry of Agriculture
P.O. Box 2022
Pamba House
Dar Es Salaam
Tel. +255 51 865312
Commissioner: Dr. F. Shao

Name of document(s) and year of publication

National Agricultural and Livestock Research Masterplan (1992/3–2007/8).

Support for the document

Advisory services were received from ISNAR with funding from
World Bank
Germany
United Kingdom
Netherlands

Objectives of the document

1. to examine the constraints and priorities for agricultural research in (mainland) Tanzania and, specifically, to provide an action plan for the immediate medium-term (five-year) period
2. to review the organization and management of the agricultural research system in Tanzania
3. to address the issue of funding constraints on two fronts: the need to prioritize programs within agricultural research and the need to mobilize domestic nongovernmental funds

Overall priorities for national agricultural research

1. research inputs to be concentrated on first priority research programs (see below), subject to regular reviews
2. priority research areas will determine the priorities for the rehabilitation of the physical NARLM infrastructure (i.e., first priority

involves eight research institutes and second priority involves 14 institutes)

3. resource mobilization through the commercialization of research in order to promote the most economic use of resources within the context of national research and development objectives
4. reassess and revise human resource management according to the needs of the priority research programs.
5. establish linkages between zonal and national research institutes as well as with international and regional agencies in order to improve the efficiency and effectiveness of Tanzania's agricultural research and extension system

Research program priorities

1. Food and cash crops
 - coffee
 - cotton
 - tea
 - rice
2. Livestock
 - animal health and livestock diseases
 - ruminant meat and milk production
3. Soil and water management
4. Agroforestry
5. Farming systems research
6. Agricultural economics.

Notes

Tanzania is currently in the process of setting zonal priorities and producing the relevant zonal plans. A separate master plan for Zanzibar is referenced below.

ISNAR call no./document location

G148/NARM/91-3

Other references

1989. ISNAR. Tanzania National Agricultural and Livestock Masterplan: Summary of Framework (Workshop Paper) (G148/A50/PLAN/ISNAR).

Togo

Name and address of the national agricultural research agency

Direction de la Recherche Agronomique
Ministère du Développement Rural
Lomé

Tel. +228 215286/8 or 221793

Fax. +228 215706/218792

Telex 5303 Camola

Director: Dr. Fousséni Adam

Name of document(s) and year of publication

Composante Recherche Agricole: 1. Rapport De Préparation (1995) (Draft).

Support for the document

Advisory services were received from ISNAR with funding from World Bank

Objectives of the document

1. to describe and analyze the current situation of agricultural research in Togo
2. to define activities and prepare a strategy for a process of developing national agricultural research capacity
3. to propose the organization of a National Center for Agricultural Research (CNRA) and prepare for the development of a long-term strategic plan for agricultural research

Overall priorities for national agricultural research

1. to diversify agricultural production through support services to small-scale farmers
2. to improve the incomes and standard of living for farmers through improved productivity and market policies

3. to restructure agricultural services to make them more effective and relevant to small-scale farmers

Research program priorities

Priorities for agricultural research in Togo are in the process of being reassessed. Earlier and existing programs which are subject to change have included:

1. Cash/industrial crops
 - cotton
 - coffee
 - cacao
2. Cereals
 - maize
 - sorghum
 - millet
 - rice
3. Roots and tubers
 - manioc
 - igrname
4. Animal production
 - cattle
 - small ruminants

Notes

This is a preparatory document in a process that will lead to the development of a long-term master plan.

ISNAR call no./document location

Currently uncataloged.

Other references

1994. SPAAR (G224/RM8/SPAAR/94).

1989. SPAAR. Recherche Agricole au Togo. Workshop Paper (G224/A50/ANON/89).

Uganda

Name and address of the national agricultural research agency

National Agricultural Research Organisation (NARO)
P.O. Box 295
Entebbe
Tel. +256 42 20512
Fax. +256 42 21070
Telex 61287 NATURE UG
Director: Prof. J Mukiibi

Name of document(s) and year of publication

National Agricultural Research Strategy and Plan (1991)
Exec. Summary; Vol I/II

Support for the document

Advisory services received from ISNAR and funding from
1. World Bank

Objectives of the document

1. to provide guidance for continuing rehabilitation and restructuring of the agricultural services in Uganda
2. to indicate the direction and processes of current activities and proposed efforts to improve the effectiveness of agricultural research in Uganda can fit together

Overall priorities for national agricultural research

1. ensuring the supply of adequate and balanced food in all parts of the country and at all times
2. ensuring the supply of raw materials to meet the needs of local industries
3. stimulating production of import substitution
4. diversifying production for export
5. raising producers' incomes and improving the quality of life

6. conserving soil, water, forest, and other resources for improving and sustaining agricultural productivity

Research program priorities

1. Crops
 - bananas and plantains
 - millets
 - cassava
 - sweet potato
 - beans
 - groundnut
 - vegetables
 - coffee
 - cotton
2. Livestock
 - cattle
3. Lake Victoria-Kyoga fisheries
4. Forestry (natural resources)
5. Soil productivity
6. Integrated pest management (plant protection)
7. Crop management
8. Animal nutrition and management

Notes

Volume II has detailed information on second and third level Research program priorities and priority-setting methodology.

ISNAR call no./document location

O/ISNAR/G150/91ES
O/ISNAR/G150/91-1/2

Other references

1989. Five Year Food crops Research Plan and Recommendations for Strengthening Research and Extension Linkages (1989-94) (G150/A50/PLAN/HAR).

Zaire

Name and address of the national agricultural research agency

Institut National pour l'Etude et la Recherche
Agronomique (INERA)
B.P. 2037
Kinshasa
Tel. +243 32332/4
Telex 21419 or 21164 ZR
President: Dr. Masimango Ndyababo

Name of document(s) and year of publication

Plan Directeur de la Recherche Agronomique au
Zaire (1991–2001).

Support for the document

Advisory services were received from ISNAR
prior to the production of the *Plan Directeur* and
financially supported by USAID. In the docu-
ment, INERA also acknowledges
World Bank
UNDP
FAO
Belgian government

Objectives of the document

2. to evaluate and describe national agricultural
research activities in Zaire
1. to identify the priorities for research which
would support national development

Overall priorities for national agricultural research

1. to restructure national agricultural research
and, specifically, to improve the organiza-
tion and output of INERA
2. to develop research priorities based on the
importance of food self-sufficiency, im-

provement in national agroindustry, and in-
creases in national agricultural exports

3. to determine research that is relevant to
small-scale farmers and the technical, eco-
nomical, and social constraints they face

Research program priorities

1. Crops
 - manioc
 - maize
 - legumes
 - rice
2. Industrial / cash crops
 - coffee
 - cotton
 - oil palm
3. Animal production
 - livestock
4. Natural resources and environment
 - soil fertility
5. Production linkages
 - research development
 - socioeconomic systems

Notes

This plan addresses priorities for the me-
dium-term (five-year) period and projections for
the long term (10 to 15 years).

ISNAR call no./document location

G130/A50/PLAN/90-2

Other references

1984. Elaboration d'un Plan de Reorganisation
du Système National de Recherche Agricole
du Zaire (G/130/A50/PLAN/ISNAR).

Zambia

Name and address of the national agricultural research agency

Mt. Makulu Research Station
P.O. Box 7
Chilanga
Tel. +260 278008/278087
Fax +260 278139/278390
Assistant Director: Dr. K. Munyinda

Name of document(s) and year of publication

National Research Action Plan 1990–1995 (1991).

Support for the document

Past donor support received from

1. World Bank
2. Netherlands (KIT)

Objectives of the document

1. agroecological regional approach to research planning
2. rationalization of research station networking
3. restructuring of the research organization
4. setting up of mechanisms for donor coordination, problem identification, and program planning, monitoring, and evaluation.

Overall priorities for national agricultural research

1. ensure national and regional food security through dependable annual production of adequate supplies of food stuffs
2. ensure that the existing resource base is maintained and improved upon
3. generate income and employment
4. contribute to sustainable industrial development
5. significantly expand the sectors contribution to the national balance of payments

Research program priorities

1. Crop development and improvement
 - sorghum
 - millets
 - cassava
 - sweet potato
 - grain legumes
 - oilseed crops
 - fruits and vegetables
2. Livestock development and improvement
3. Soil and water management
4. Farming systems

These programs are further defined by agroecological region and station.

Notes

The Royal Tropical Institute Netherlands (KIT) has provided support to Zambia through ZAREP. KIT's involvement in Zambia through ZAREP ended in 1995. The World Bank ASIP began January 1, 1995; it is concerned with short-term assistance and donor coordination for the NARS.

ISNAR call no./document location

Materials not yet cataloged.

Other references

1994. Agricultural Sector Investment Programme (ASIP) Research Sub-Programme.
1993. Feasibility Study (The Netherlands) to Support Research Capacity (A50/B1E/93).
1988. KIT. Zambia Agricultural Research and Extension Project Preparation of a Five-Year Action Programme (G184/ZAREP/KIT/88).

Zanzibar

Name and address of the national agricultural research agency

Department of Agriculture, Research and Extension

Ministry of Agriculture, Livestock and Natural Resources (MALNR)

P.O. Box 159

Zanzibar

Tel. +255 54 33401/32460

Fax +255 54 33306/31252

Name of document(s) and year of publication

research Masterplan for Agriculture and Natural Resources in Zanzibar (Policies, Strategies and Objectives to the Year 2000) (1991).

Support for the document

FAO Technical Cooperation Programme

Objectives of the document

to outline policy and strategic objectives for agricultural research in Zanzibar

to describe the present situation of agricultural research, identify constraints, and outline proposals for overcoming these constraints.

Overall priorities for national agricultural research

1. to form an institution to cater for research activities in both agriculture and livestock
2. to train researchers until self-sufficiency is established

3. to collect and disseminate research findings which are relevant and useful to farmers

Research program priorities

1. Food and cash crops
 - rice: variety selection and management based on optimal yield, disease, and pest resistance and local acceptability
 - banana and plantain: variety selection based on pest and disease resistance
 - cassava: improvement in availability of local varieties
 - cloves: crop protection
 - coconut: crop protection
2. Livestock
 - cattle: production (meat, milk, draught, and manure), nutrition, and disease control
 - farming systems research: for five farming systems: coral rag, clove, coconut, rice
 - mixed livestock/crop systems.
3. Forestry: plantation

Notes

This entry does not intend or assume to identify Zanzibar in isolation of the rest of Tanzania. It only reflects that a separate agricultural research plan exists.

ISNAR call no./document location

G148/A50/PLAN/91Z

Zimbabwe

Name and address of the national agricultural research agency

Department of Research and Specialist Services (DRSS)

P.O. Box 8108

Causeway, Harare

Tel. +263 4 704531

Fax +263 4 728317

Telex 22455 Agriczw

Director: Dr. N. Gata

Name of document(s) and year of publication

Zimbabwe: A Framework for National Agricultural Research Planning (NARP) (Draft: 1996).

Support for the document

Advisory services were received from ISNAR.

Objectives of the document

1. to review the structure and organization of DR&SS and make proposals that would enable the department to respond optimally to its mandate
2. to review current mechanisms and procedures for planning, priority setting, and resource allocation, as well as suggest improvements
3. to review the programming of research and recommend mechanisms for improvement
4. to examine existing linkages between research and client/user organizations and communities, and make recommendations for improving these linkages

Overall priorities for national agricultural research

1. applied and adaptive research activities
2. research aimed at the low potential, communal areas
3. linkages between national, regional, and global institutions .

Research program priorities

1. Crops
 - cereals: maize, wheat, sorghum and millet
 - oilseeds: groundnuts, soybean, sunflower
 - fruits and vegetables: citrus, all vegetables (field beans and root crops included)
 - fiber crops: cotton
2. Livestock
 - cattle: beef and dairy
 - sheep and goats
3. Livestock production systems
 - improved systems for communal areas
 - production issues in commercial farming areas
4. Production factors and resources
 - soil fertility, conservation
 - irrigation and drainage
 - engineering

Notes

Zimbabwe is presently developing a long-term national agricultural research plan.

ISNAR call no./document location

Not yet cataloged.

Other references

1995. Zimbabwe's Agricultural Policy Framework 1995–2020 (G176/RM1/MIN/95).
1988. A Review of the Department of Research and Specialist Services. Report to the Government of Zimbabwe. ISNAR Report No. R3ZE (G176/DRSS/ISNAR/R32E).



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Agricultural Research Plans in Sub-Saharan Africa: A Status Report



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